SECTION X.

CAUSES OF DEATH.

Tables 4 and 5, Part III of this report, show the number of deaths reported in the United States, and in each state and territory, during the census year, due to each of certain specified diseases and classes of diseases, with distinction of age and sex.

Table 6 gives the same data for each state group, in certain of the registration states.

Table 7 gives the same information for Alabama, with the additional distinction of color.

Table 8 gives the same information for the registration area.

Table 9 gives the same information for the rural districts of the registration states.

Table 10 gives the same information for the 271 registration cities.

Table 11 gives the same information for the registration cities, by grand divisions.

Table 12, Part III, shows the number of deaths reported in the Chinese population of the United States, as due to each of certain diseases and classes of diseases, with distinction of sex and age, for the census year.

Table 13 gives the same information for the Indian population.

Table 16, Part III, gives the deaths from certain specified diseases and classes of diseases, for the United States and for each grand group, with distinction of month of death, sex, and of two age groups.

Table 17 gives the same information for the registration cities, with distinction of white and colored.

Table 18, Part III, shows the number of deaths from each reported cause by states, state groups, and registration cities, during the census year, the causes of death being arranged in alphabetical order and given more fully than in any other table.

Table 14, Part IV, shows the number of deaths from each reported cause for 6 years ending May 31, 1890, in the sum of the state of New Jersey, the Metropolitan district, Baltimore, Boston, Philadelphia, and the District of Columbia, in the aggregate, for the white, the colored, and each birthplace of mother, by age and sex.

Of 875,521 deaths reported as having occurred in the United States during the census year, 34,286, or 39.17 per 1,000, were reported as due to unknown causes. In the Tenth Census the corresponding proportion was 49 per 1,000. In the registration area the proportion of deaths from unknown causes was 11.79, in the rest of the country 63.16 per 1,000 of all cases reported.

In addition to the deaths for which no cause was reported, a large proportion of those reported as due to inanition, debility, old age, dropsy, convulsions, diseases of the heart, and asthma should really be set down as due to unknown causes, so that, even where there is a fairly good registration system, the causes of from 10 to 15 per cent of the deaths recorded are practically unknown, a very large proportion of this class being of infants under 1 year of age.

The nomenclature and classification of diseases used in the tables are the same as those employed in the Tenth Census.

The following table shows the principal reported causes of death in the order of their frequency in the United States for the years ending May 30, 1880 and 1890, and the proportion from each cause per 1,000 from known causes:

CAUSES.	NUMBER OF DEATHS.		PROPORTION FROM EACH CAUSE PER 1,000 FROM KNOWN CAUSES.	
	1890	1880	1890	1880
All causes	875,521	756,893	.....	.....
Unknown causes	34,286	37,193	.....	.....
Known causes	841,235	719,700	.....	.....
1. Consumption	102,199	91,270	121.49	126.81
2. Pneumonia	76,496	63,053	90.93	87.60
3. Diarrheal diseases (*a*)	47,201	39,608	56.11	54.20
4. Heart, diseases of the	44,959	26,068	53.44	36.22
5. Stillborn	34,102	24,870	40.54	34.56
6. Diphtheria	27,815	38,143	33.06	52.99
7. Cholera infantum	27,510	24,983	32.70	34.71
8. Typhoid fever	27,058	22,854	32.16	31.75
9. Debility and atrophy	25,536	14,760	30.36	20.51
10. Bronchitis	21,422	10,984	25.46	15.26
11. Malarial fever	18,594	20,231	22.10	28.11
12. Cancer	18,536	13,068	22.03	18.16
13. Brain, inflammation of the (*b*)	17,775	18,384	21.13	25.54
14. Convulsions	16,598	17,844	19.73	24.79
15. Old age	16,591	14,106	19.72	19.68
16. Paralysis	16,570	13,907	19.70	19.32
17. Apoplexy	14,699	9,658	17.83	13.42
18. Croup	13,862	17,066	16.48	24.06
19. Brain, diseases of the (*c*)	12,322	12,347	14.65	17.15
20. Bright's disease	11,637	5,386	13.83	7.48
21. Dropsy	10,070	14,788	11.97	20.55
22. Liver, diseases of the (*d*)	9,460	8,105	11.25	11.39
23. Measles	9,256	8,072	11.00	11.21
24. Whooping cough	8,432	11,064	10.02	15.37
25. Stomach, diseases of the (*e*)	8,060	5,630	9.60	7.83
26. Kidney, diseases of the	7,820	3,618	9.30	5.03
27. Premature birth	7,636	6,785	9.08	9.43
28. Inanition	6,995	4,321	8.32	6.00
29. Scarlet fever	5,969	16,338	7.10	22.77
30. Railroad accidents	5,756	2,349	6.84	3.26
31. Childbirth	5,295	5,646	6.29	7.84
32. Drowning	5,104	4,319	6.07	6.00
33. Peritonitis	4,995	3,304	5.94	4.59
34. Rheumatism	4,508	3,399	5.36	4.72
35. Hydrocephalus	4,338	4,351	5.16	6.05

a Diarrhea, dysentery, enteritis, and cholera morbus.
b Inflammation of the brain and meningitis.
c Diseases of the brain and ear.
d Jaundice, inflammation and abscess of the liver, and other diseases of the liver.
e Diseases of stomach and gastritis.

It will be seen from this table that consumption, pneumonia, and diarrheal diseases head the list as causing the greatest number of deaths in 1890, as in 1880; that the proportion of deaths from diphtheria, malarial fever, croup, dropsy, whooping cough, and scarlet fever was decidedly less in 1890 than in 1880, while the proportion of deaths reported as due to diseases of the heart, debility and atrophy, to bronchitis, to apoplexy, to Bright's disease, and to diseases of the kidneys was greater in 1890 than in 1880.

The following table shows for each principal cause of death and group of causes the number of deaths reported in the four last censuses, with the proportion from each cause per 100,000 deaths from all causes reported:

CAUSES.	DEATHS.				PROPORTION FROM EACH CAUSE PER 100,000 DEATHS FROM ALL CAUSES.			
	1890	1880	1870	1860	1890	1880	1870	1860
All causes	875,521	756,893	492,263	394,153	.....	.....	.....	.....
Unknown causes	34,286	37,133	17,266	43,762	3,916	4,906	3,507	11,103
General diseases—A	188,790	197,723	144,861	112,101	21,563	26,123	29,428	28,441
Smallpox	393	871	4,507	1,271	45	115	916	323
Measles	9,256	8,072	9,237	3,899	1,057	1,066	1,876	989
Scarlet fever	5,969	16,388	20,320	26,402	682	2,165	4,128	6,698
Diphtheria	27,815	38,143	6,303	1,663	3,177	5,039	1,280	422
Whooping cough	8,432	11,964	9,008	8,408	963	1,462	1,830	2,133
Cerebro-spinal fever	3,333	2,898	651	.....	381	383	132	.....
Typhoid fever	27,038	22,854	22,187	19,236	3,091	3,019	4,507	4,880
Diarrheal diseases	74,711	63,991	51,004	30,426	8,533	8,454	10,495	7,719
Malarial fever	18,594	20,231	11,683	15,670	2,124	2,673	2,374	3,976
Erysipelas	2,663	4,275	3,162	2,746	304	565	642	697
Septicæmia	3,748	1,598	258	.....	428	211	52	.....
Venereal diseases	1,619	1,217	590	233	185	161	120	59
Hydrophobia	143	80	63	38	16	11	13	10
Others of this group	5,051	6,041	5,228	2,109	577	798	1,062	535
General diseases—B	4,899	5,094	3,420	4,452	560	673	694	1,129
Parasitic diseases	731	1,537	1,069	1,996	83	203	217	506
Alcoholism	2,657	1,592	1,410	1,500	303	210	286	382
Lead poison	109	30	31	.....	12	4	6	.....
Other poisons	1,402	1,935	910	956	160	256	185	241
General diseases—C	92,395	66,048	28,857	15,604	10,553	8,726	5,863	3,953
Premature birth	7,636	.....	.....	.....	872	.....	.....	.....
Stillborn	34,102	24,870	9,060	1,540	3,895	3,287	1,841	391
Malformation	1,535	1,138	364	127	175	150	74	32
Inanition, debility, and atrophy	32,531	25,866	11,447	3,050	3,716	3,417	2,326	774
Old age	16,591	14,168	7,986	10,887	1,895	1,872	1,622	2,762
General diseases—D	150,433	136,442	97,303	74,841	17,182	18,029	19,767	18,988
Rheumatism	4,503	3,300	2,012	1,881	515	449	592	477
Scrofula and tabes	4,121	5,000	3,418	2,703	471	661	694	686
Consumption	102,199	91,270	69,896	49,082	11,673	12,059	14,199	12,453
Hydrocephalus	4,338	4,351	4,041	3,414	495	575	821	866
Cancer	18,536	13,068	6,224	3,672	2,117	1,727	1,264	932
Tumor	2,448	1,781	891	608	280	235	181	154
Anæmia	1,102	755	265	80	126	100	54	19
Dropsy	10,070	14,788	7,856	12,657	1,150	1,954	1,596	3,211
Diabetes	2,407	1,443	837	385	275	191	170	98
Others of this group	654	490	963	400	75	65	196	101
Others of this class	50	97	.....	.....	6	13	.....	.....
Diseases of the nervous system	89,974	81,905	55,954	36,404	10,277	10,821	11,367	9,236
Inflammation of the brain	17,775	18,384	17,035	10,349	2,030	2,429	3,461	2,626
Apoplexy	14,959	9,658	5,226	3,083	1,713	1,276	1,062	782
Paralysis	16,570	13,907	7,501	4,637	1,893	1,837	1,524	1,176
Tetanus and trismus nascentium	2,019	2,537	1,626	1,621	231	335	330	411
Epilepsy	2,367	2,157	1,414	501	270	285	287	127
Convulsions	16,598	17,844	12,751	9,077	1,896	2,358	2,590	2,304
Mental diseases	1,913	1,232	731	452	218	163	149	115
Diseases of the brain	12,322	12,347	.....	.....	1,407	1,631	.....	.....
Others of this class	5,411	3,839	9,670	6,684	618	507	1,965	1,695
Diseases of the circulatory system	48,757	28,582	17,034	7,880	5,569	3,776	3,460	1,999
Diseases of the respiratory system	138,361	104,824	64,175	50,188	15,803	13,849	13,037	12,733
Croup	13,862	17,960	10,692	15,211	1,583	2,374	2,172	3,859
Laryngitis	725	807	295	74	83	107	60	18
Bronchitis	21,422	10,984	4,253	2,304	2,447	1,451	864	585
Pneumonia	76,496	63,053	40,012	27,094	8,737	8,330	8,128	6,874
Pleurisy	2,135	1,958	3,773	1,260	244	258	767	320
Asthma	2,438	1,707	1,264	669	278	226	257	170
Others of this class	21,283	8,349	3,886	3,576	2,431	1,103	789	907

NUMBER OF DEATHS AND PROPORTION FROM EACH CAUSE—Continued.

CAUSES.	DEATHS.				PROPORTION FROM EACH CAUSE PER 100,000 DEATHS FROM ALL CAUSES.			
	1890	1880	1870	1860	1890	1880	1870	1860
Diseases of the digestive system	39,466	32,630	22,591	18,150	4,508	4,338	4,589	4,606
Dentition	3,180	4,264	3,247	4,909	363	563	660	1,245
Diseases of the stomach	8,080	5,630	2,860	1,293	923	745	581	328
Obstruction of the bowels	2,203	1,275	263	.....	252	169	53	.....
Hernia	1,482	1,230	638	360	169	163	129	91
Other diseases of the bowels	1,989	2,060	2,550	1,610	227	273	518	408
Jaundice	1,698	1,364	1,311	681	194	180	267	173
Inflammation and abscess of the liver	2,242	2,060	1,534	200	256	273	312	51
Other diseases of the liver	5,520	4,762	2,658	2,633	630	629	540	668
Peritonitis	4,005	3,304	957	113	571	437	194	29
Ascites	806	732	1,378	.....	92	97	280	.....
Others of this class	7,271	6,125	5,195	6,357	830	809	1,055	1,612
Diseases of the urinary system and male organs of generation	23,652	12,098	4,744	1,731	2,701	1,598	961	439
Bright's disease	11,637	5,386	1,723	.....	1,329	712	349	.....
Calculus urinary	522	719	73	674	60	95	18	171
Diseases of the kidney	7,320	3,618	2,241	810	893	478	455	207
Others of this class	3,073	2,375	708	241	420	313	142	61
Diseases of the female organs of generation	2,895	2,454	1,318	410	331	324	263	104
Ovarian tumors	494	399	160	9	56	53	34	2
Uterine diseases	621	522	1,029	244	71	69	209	61
Others of this class	1,780	1,533	129	.....	203	203	24	.....
Affections connected with pregnancy	11,257	11,513	6,638	5,268	1,286	1,525	1,348	1,337
Abortion	838	721	188	.....	96	95	38	.....
Childbirth	5,295	5,646	4,466	4,066	605	748	895	1,032
Puerperal septicæmia	3,863	4,230	1,828	1,202	441	559	371	305
Extra-uterine pregnancy	48	.....	.....	.....	5	.....	.....	.....
Others of this class	1,213	916	216	.....	139	125	44	.....
Diseases of the bones and joints	2,802	2,104	2,187	1,393	320	278	444	353
Diseases of the spine	2,107	1,360	1,663	1,078	241	180	338	273
Diseases of the bones	272	267	132	184	31	38	27	47
Diseases of the hip joint	254	220	188	.....	29	30	38	.....
Others of this class	169	228	204	131	19	30	41	33
Diseases of the skin	1,993	1,890	2,766	2,422	228	250	562	614
Abscess	1,083	1,306	665	568	124	173	135	144
Carbuncle	274	198	168	98	31	26	34	25
Others of this class	636	392	1,933	1,756	73	51	393	445
Diseases of the absorbent system	412	310	13	.....	47	41	2	.....
Addison's disease	99	46	12	.....	11	6	2	.....
Diseases of the spleen	155	179	.....	.....	18	24	.....	.....
Others of this class	158	85	.....	.....	18	11	.....	.....
Accidents and injuries	45,149	35,001	23,137	19,541	5,157	4,743	4,700	4,958
Burns and scalds	3,850	4,785	3,391	4,266	440	632	689	1,082
Drowned	5,104	4,319	4,075	3,121	583	571	828	792
Exposure and neglect	996	1,298	380	301	114	172	77	76
Gunshot wounds	2,552	2,287	971	741	291	302	197	188
Homicide	1,953	1,336	2,057	989	223	177	418	251
Infanticide	43	38	.....	.....	5	5	.....	.....
Injuries by machinery	275	120	420	.....	31	16	85	.....
Railroad accidents	5,756	2,349	1,582	599	657	310	321	152
Suffocation	2,124	2,322	1,257	2,129	243	307	255	540
Suicide by shooting	1,066	472	251	112	122	62	51	29
Suicide by drowning	224	154	119	71	26	20	24	18
Suicide by poison	858	336	203	137	98	44	42	35
Other suicides	1,784	1,550	772	673	204	205	157	171
Sunstroke	475	555	397	360	54	73	81	91
Wounds	1,176	551	1,070	.....	134	73	217	.....
Other accidents and injuries	16,913	13,430	6,102	6,042	1,932	1,774	1,238	1,533

The following table shows, for the United States and for the registration states, the proportion of deaths from each of certain specified causes per 1,000 deaths from known causes, with distinction of color and of children of mothers born in Ireland and in Germany:

CAUSES.	WHITE.		COLORED.		IRISH MOTHERS.		GERMAN MOTHERS.	
	United States.	Registration states.	United States.	Registration states.	United States.	Registration states.	United States.	Registration states.
Scarlet fever	7.93	6.62	1.32	1.76	4.91	4.64	8.03	6.55
Typhoid fever	32.07	17.63	32.80	23.04	19.70	16.78	27.52	15.45
Malarial fever	17.73	7.09	52.28	13.60	9.16	8.03	10.54	6.47
Diphtheria	36.50	35.35	8.72	16.87	26.00	26.69	46.18	38.07
Croup	17.20	12.72	11.53	7.18	7.45	7.72	15.20	15.53
Diarrheal diseases	90.66	88.93	76.03	77.19	60.79	66.33	85.09	101.55
Consumption	114.55	121.34	169.34	181.34	177.71	185.92	117.16	130.76
Pneumonia	89.90	97.66	93.04	99.61	113.72	119.71	89.93	99.07
Measles	10.45	5.36	14.82	8.65	3.72	2.60	7.35	4.42
Whooping cough	9.60	8.91	12.05	11.59	6.04	7.00	6.22	7.32
Cancer and tumor	26.87	28.42	11.05	12.22	29.26	26.19	33.64	30.64
Heart disease and dropsy	64.91	70.00	68.88	59.56	75.13	69.66	73.32	65.11
Childbirth and puerperal diseases (a)	27.31	14.70	36.33	14.09	20.01	16.07	35.33	22.19
Diseases of the liver	11.87	11.69	6.90	5.41	14.60	14.57	14.19	15.14
Diseases of the nervous system	110.87	119.73	79.90	98.35	95.46	94.18	105.77	108.10
Diseases of the urinary system	29.74	39.97	16.91	31.23	46.44	51.39	34.97	46.01
Old age	20.21	26.31	17.08	13.10	30.03	26.29	23.15	15.38
Stillbirths	40.29	45.15	42.28	70.90	24.47	28.71	38.15	54.84
All other causes	255.79	250.13	260.86	266.59	245.81	235.59	248.30	230.06

a Per 1,000 deaths from known causes among females.

The following table shows, for the United States and for the rural districts of the United States, the proportion of deaths from each of certain specified causes, or groups of causes, per 1,000 deaths from known causes in each of certain age groups, with distinction of sex:

CAUSES.	PROPORTION OF DEATHS FROM EACH SPECIFIED CAUSE PER 1,000 DEATHS FROM KNOWN CAUSES.													
	Under 5.		10 to 15.		20 to 25.		40 to 45.		50 to 55.		60 to 65.		70 to 75.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Measles, scarlet fever, and whooping cough:														
United States	54.95	68.39	35.85	41.56	9.99	9.97	3.40	6.85	1.11	3.49	1.04	2.07	0.66	0.96
Rural	69.80	84.73	41.24	48.68	14.89	13.48	5.72	10.74	1.80	5.43	1.54	3.25	0.72	1.37
Diphtheria and croup:														
United States	85.98	91.90	113.43	143.57	8.49	9.50	2.49	1.97	1.05	1.88	0.78	2.01	0.89	0.78
Rural	94.33	100.50	113.06	143.03	9.05	9.49	2.31	1.86	1.10	2.10	0.89	2.02	0.86	0.88
Typhoid fever:														
United States	7.47	7.01	90.24	105.60	124.89	81.35	39.63	33.57	22.00	28.22	17.11	14.07	10.84	10.05
Rural	11.50	12.57	88.71	107.06	126.44	81.31	49.54	40.00	28.04	37.15	22.33	19.63	12.54	12.83
Diarrheal diseases:														
United States	188.08	194.20	50.01	42.11	23.36	23.06	28.20	29.50	32.91	35.08	36.04	45.06	39.56	44.21
Rural	198.17	201.08	56.90	45.19	26.36	22.19	33.25	30.03	36.55	36.02	38.72	43.25	40.22	43.10
Malarial fever:														
United States	15.45	17.34	56.71	60.04	36.83	32.04	23.77	22.65	16.86	17.03	15.02	20.19	12.42	14.37
Rural	25.51	28.79	65.85	70.06	46.11	39.01	33.14	28.83	22.03	22.27	17.94	24.14	15.07	17.05
Consumption:														
United States	13.33	15.24	66.96	144.86	296.82	386.47	229.88	248.93	169.32	158.90	108.22	107.06	63.29	68.76
Rural	15.39	18.31	62.62	132.20	259.49	372.21	212.15	253.29	165.95	175.70	100.10	121.98	67.46	81.31
Pneumonia:														
United States	72.93	73.17	75.99	80.09	117.08	70.27	134.09	99.55	129.94	109.90	109.52	111.67	93.54	105.55
Rural	74.38	73.21	78.64	83.03	119.42	69.79	134.21	97.87	131.40	102.79	111.06	107.18	97.25	106.68
Inanition, debility, and atrophy:														
United States	77.77	77.82	3.36	4.77	2.62	3.59	5.29	7.93	7.70	11.43	15.59	24.80	35.03	43.11
Rural	51.99	48.97	2.99	3.11	1.60	2.65	4.40	7.35	6.71	7.84	11.09	15.33	26.38	29.98
Cancer and tumor:														
United States	1.09	1.16	4.47	4.03	4.83	6.19	25.34	80.09	43.52	116.04	54.71	97.51	44.93	63.03
Rural	1.47	1.72	4.72	4.11	5.15	5.86	25.98	71.24	41.26	113.17	54.07	95.84	46.09	63.28
Dropsy:														
United States	2.42	2.13	14.99	14.40	5.00	9.17	10.64	19.67	15.99	25.72	23.10	31.10	30.09	32.87
Rural	4.02	3.57	18.04	17.30	6.89	12.49	15.41	26.85	23.03	34.61	30.93	42.62	36.81	43.09

CAUSES.	PROPORTION OF DEATHS FROM EACH SPECIFIED CAUSE PER 1,000 DEATHS FROM KNOWN CAUSES.													
	Under 5.		10 to 15.		20 to 25.		40 to 45.		50 to 55.		60 to 65.		70 to 75.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Diseases of the nervous system:														
United States	122.12	120.04	89.22	85.32	44.64	40.79	79.75	71.34	105.14	114.15	141.39	141.53	165.35	165.94
Rural	108.74	107.58	82.74	82.78	44.58	39.71	75.42	64.99	95.64	106.83	134.11	135.00	158.91	165.46
Diseases of the respiratory system, exclusive of pneumonia and croup:														
United States	64.80	66.06	32.69	30.27	31.13	29.71	44.68	40.88	54.96	56.94	65.61	71.35	76.28	90.48
Rural	63.01	62.26	34.67	41.46	34.49	32.17	49.43	42.80	55.68	57.09	64.14	68.44	76.74	86.40
Diseases of the digestive system:														
United States	41.83	40.49	48.43	40.18	31.49	37.39	57.44	55.27	64.12	67.67	72.65	65.05	56.24	58.06
Rural	51.79	49.04	47.96	38.22	31.30	33.20	54.50	46.91	61.79	62.87	71.52	65.61	57.10	59.17
Diseases of the urinary system:														
United States	3.67	3.03	15.18	13.53	17.40	20.44	46.00	41.09	63.83	46.76	82.14	44.73	91.54	33.38
Rural	3.41	2.74	12.02	10.58	13.56	14.24	35.80	22.80	51.38	29.42	72.98	29.81	93.19	26.06
Accidents and injuries:														
United States	25.75	22.97	170.98	40.06	107.19	29.48	130.26	26.79	100.65	23.63	61.65	22.72	37.30	19.59
Rural	35.92	32.20	163.75	47.68	181.04	26.52	141.91	23.35	106.56	23.07	64.13	23.62	37.68	20.96

To illustrate some of the uses which may be made of the data contained in the tables, the following remarks are submitted with regard to certain causes of death, including all of the causes for which data are given in the table above:

GENERAL DISEASES—A.

The group of specific diseases included under this heading in the tables includes smallpox, measles, scarlet fever, diphtheria, whooping cough, acute fevers, diarrheal diseases, erysipelas, septicæmia, and venereal diseases, corresponding to the grouping used in the vital statistics of the Tenth Census. This grouping does not include all of the specific infectious diseases, and is by no means in accordance with the present state of knowledge with regard to the causes of disease, but it is used for purposes of comparison. The total number of deaths reported as occurring from this group of diseases in the United States during the census year was 188,790, of which 98,062 were of males and 90,728 of females, giving a ratio of 224.42 per 1,000 of all deaths from known causes. In the registration area the number of deaths reported as due to this group of diseases was—males, 39,692; females, 37,390; total, 77,082; being 190.70 per 1,000 of all deaths from known causes, and 392.09 per 100,000 of population living at the end of the year.

The following table shows the death rates from this group of diseases during the census year per 100,000 of population for the registration area and some of its subdivisions, with distinction of sex and color:

AREAS.	AGGREGATE.			WHITE.			COLORED.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
Registration area	392.09	404.95	379.29	385.22	397.07	372.83	526.53	549.52	504.26
Cities	437.57	453.64	421.71	430.55	445.99	415.28	550.88	578.05	523.95
States	368.97	381.77	357.03	366.42	378.85	354.24	477.75	481.64	474.07
Cities	448.58	468.35	429.76	445.32	465.16	426.40	568.54	589.64	549.65
Rural	247.36	252.36	242.28	247.00	252.33	241.58	267.81	253.87	282.79
Cities in nonregistration states	427.40	440.52	414.03	415.99	427.77	403.94	545.97	576.11	516.49

It will be seen from this table that in the registration area the death rate from this group of diseases was higher among males (404.95) than among females (379.29); that it was much higher among the colored (526.53) than among the whites (385.22); and that in the registration states it was higher in the cities (448.58) than it was in the rural districts (247.36). In the rural districts the death rate from this group of diseases among the colored (267.81) was not much higher than among the whites (247.00).

The following table shows, for each of the registration states, the death rates per 100,000 of population from the group of general diseases—A, during the census year, with distinction of sex, and of cities and rural districts:

REGISTRATION STATES.	AGGREGATE.			MALES.			FEMALES.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.	Total.	Cities.	Rural.
Connecticut	362.07	435.33	309.92	376.69	464.28	315.29	347.74	407.45	304.58
Delaware	351.94	345.10	355.87	372.78	373.21	372.54	330.44	316.82	338.41
District of Columbia	510.43	510.43	.....	525.62	525.62	.....	496.66	496.66	.....
Massachusetts	343.47	370.19	256.04	350.90	381.27	278.98	330.78	359.83	233.60
New Hampshire	313.65	406.32	275.16	336.61	466.20	286.37	291.11	352.85	263.71
New Jersey	391.37	497.30	252.83	393.86	502.39	254.47	388.89	492.31	251.17
New York	375.32	473.19	217.11	389.20	495.17	223.63	361.64	452.00	210.43
Rhode Island	427.78	437.36	414.60	439.82	462.06	410.26	416.38	414.63	418.88
Vermont	256.30	325.13	249.90	253.36	295.27	249.71	259.36	352.57	250.09

It will be seen from this table that the death rates from this group of diseases were higher among males than among females, and much higher in the cities than in the rural districts, being highest of all in the District of Columbia (510.43, owing mainly to the high proportion of colored in the population) and lowest in the rural districts of New York (217.11).

The following table shows the proportion of deaths reported as due to this group of diseases per 1,000 deaths from known causes, excluding stillbirths, in the registration area and some of its subdivisions, during the census year, with distinctions of sex, color, general nativity, and parental nativity:

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
Registration area	202.11	203.66	198.61	209.31	242.97	209.31	301.70	101.57	182.82	181.21	184.56
Cities	210.70	213.11	206.73	220.33	260.48	235.81	305.29	102.33	184.41	183.25	185.67
States	191.58	192.00	189.13	195.20	230.01	200.05	294.04	91.20	176.20	168.56	184.22
Cities	203.75	204.61	200.10	209.53	256.48	226.28	297.22	90.05	181.57	174.53	188.89
Rural	164.39	164.61	164.72	164.40	180.90	168.51	276.03	95.97	153.85	144.39	164.22
Cities in nonregistration states	217.01	222.87	214.07	233.27	264.92	269.72	335.98	118.17	185.25	185.77	184.63

It will be seen from this table that the proportion of deaths due to this group of diseases to known causes was slightly greater among females (white 209.31, colored 184.56) than among males (white 198.61, colored 181.21); that it was slightly greater among the whites (203.66) than among the colored (182.82); that it was much greater among the native born whites (242.97) than among the foreign born whites (101.57), which is due to the age distribution of the two classes; and that among the native born it was greater among those having one or both parents foreign born (301.70) than among those of whom both parents were native (209.31).

The following table shows for the registration area and some of its subdivisions the death rates due to this group of diseases during the census year at all ages and in each of six age groups, per 100,000 of population of those age groups, with distinction of sex:

AREAS.	DEATH RATES PER 100,000 OF POPULATION OF CORRESPONDING AGES.						
	All ages.	Under 1 year.	Under 5 years.	5 to 15 years.	15 to 45 years.	45 to 65 years.	65 years and over.
Registration area	392.09	6,457.85	2,325.89	242.50	122.88	155.86	503.08
Males	404.95	6,767.09	2,403.36	226.89	132.38	162.29	503.90
Females	379.29	6,140.23	2,246.85	258.20	113.45	149.49	502.35
Cities	497.57	7,066.66	2,594.30	262.08	131.73	176.51	570.89
Males	453.04	7,387.04	2,673.98	245.91	143.37	180.21	577.14
Females	421.71	6,738.13	2,503.10	278.15	120.26	166.88	576.68
States	368.97	6,799.05	2,352.39	229.68	100.82	133.81	467.32
Males	381.17	7,136.04	2,437.20	216.51	106.25	133.47	459.32
Females	357.03	6,452.91	2,266.12	243.03	95.56	134.13	474.58
Cities	448.58	8,286.95	2,946.83	263.17	106.67	156.61	556.53
Males	468.35	8,664.85	3,053.79	250.33	114.18	157.04	529.87
Females	429.76	7,900.12	2,838.73	275.97	99.61	155.85	577.46
Rural	247.36	4,026.15	1,332.88	179.68	90.60	105.54	402.11
Males	252.36	4,300.62	1,388.93	167.07	92.94	103.75	414.10
Females	242.28	3,742.41	1,275.22	192.70	88.21	107.29	390.04
Cities in nonregistration states	427.40	5,999.27	2,289.63	261.13	154.71	197.11	600.25
Males	440.52	6,271.18	2,357.22	242.12	168.97	214.03	628.92
Females	414.03	5,719.98	2,220.39	280.65	140.06	179.42	575.75
Cities of 100,000 population and upward	455.04	7,334.06	2,703.66	256.44	131.26	174.14	572.59
Males	468.49	7,628.03	2,783.21	240.61	142.95	180.50	552.34
Females	441.50	7,032.68	2,622.64	272.23	119.55	167.61	589.20
Metropolitan district	506.30	9,007.58	3,312.60	248.40	97.24	174.43	638.87
Males	521.26	9,295.01	3,411.01	238.50	106.30	162.80	608.80
Females	491.68	8,712.06	3,213.37	258.26	88.49	186.03	697.32

It will be seen from this table that the death rates from this group of diseases were highest of all in infants and young children; that they were lowest in the age group 15 to 45 years, and increased after the age of 65 years. In infants under 1 year of age in the registration states, the death rates from this group of diseases were about twice as high in the cities (8,286.95) as they were in the rural districts (4,026.15), and were highest of all among male infants in the metropolitan district (9,295.01), and lowest among female infants in the rural district (3,742.41).

In those 65 years of age and over the highest death rate from these diseases occurred among females in the metropolitan district (697.32), and the lowest among females in the rural districts of the registration states (390.04).

SMALLPOX.

The total number of deaths reported as due to smallpox in the United States during the census year was 398, of which 223 were of males and 175 of females. In 1880 the number of deaths reported as due to this disease was, males, 453; females, 418; total 871.

In the registration area the number of deaths reported as due to smallpox during the census year was, males, 24; females, 14; total 38; giving a death rate of 0.19 per 100,000 of population.

Of the 398 deaths from this disease, 231 occurred in New Mexico and 88 in Texas.

SCARLET FEVER.

The total number of deaths reported as due to scarlet fever in the United States during the census year was 5,969, of which 2,936 were of males and 3,033 were of females.

In the registration area the number of deaths reported as due to this disease was, males, 1,284; females, 1,398; total, 2,682; giving a death rate per 100,000 of population of 13.64, or about the same as for measles, which was 13.54.

In 1890 the death rate from scarlet fever per 100,000 of population was, in England and Wales, 24.2; in Scotland, 18.4; in Ireland, 6.8; in Belgium, 19.4; in Prussia, 29.0; in Austria, 51.0; in Italy, 24.3. The death rate from this disease was, therefore, less in that part of the United States having registration records than in any of the above named countries except Ireland.

During the 10 years, 1880 to 1889, the death rates from scarlet fever, per 100,000 population, were, in England and Wales, 37.7; in Ireland, 25.0; in Scotland, 32.5; in Sweden, 51.7; in Norway, 36.7; in Prussia, 45.5; in Austria, 61.5; in Saxony, 38.4; in Massachusetts, 23.3; in Connecticut, 26.5; in Rhode Island, 47.7; and in New Jersey, 46.6.

The following table shows, for the registration area and some of its subdivisions, the death rate from scarlet fever during the census year per 1,000,000 of population, with distinction of color, sex, general nativity, and parental nativity.

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
Registration area	13.64	14.20	13.63	14.77	18.36	14.17	22.27	2.75	2.72	2.55	2.89
Cities	15.25	16.03	15.74	16.32	21.70	19.30	24.10	2.98	2.64	2.34	2.92
States	13.05	13.24	12.71	13.74	16.85	13.17	22.86	2.78	5.15	4.54	5.72
Cities	16.00	16.28	16.41	16.16	22.54	19.36	25.71	3.22	5.79	4.46	6.98
Rural	8.53	8.62	7.60	9.05	9.05	8.44	15.16	1.39	3.65	4.70	2.52
Cities in nonregistration states	14.55	15.79	15.10	16.49	20.93	19.17	20.39	2.70	1.76	1.78	1.74
Cities of 100,000 population and upward	17.14	17.81	.....	.....	24.84	21.66	26.24	3.55	3.84	.....	.....
Metropolitan district, 6 years	45.62	46.24	46.10	46.37	68.89	62.25	73.21	8.23	11.09	9.05	13.06

It will be seen from this table that the death rate from this disease was much higher among the whites (14.20) than it was among the colored (2.72); that it was slightly higher among females (white, 14.77; colored, 2.89) than among males (white, 13.63; colored, 2.55), and that it was especially high among the native born whites (18.36) as compared with the foreign born whites (2.75), which is due to the much greater proportion of young children among the native born. Among those having one or both parents foreign born the death rate from this disease was 22.27. In the registration states the number of deaths reported as due to this disease was, males, 736; females, 814; total, 1,550, giving a death rate of 13.05 per 100,000 of population. In these states the rate was higher in the cities (16.00) than it was in the rural districts (8.53). It was especially high in cities of 100,000 population and upward (17.14), and highest of all in the metropolitan district for the 6-year period (45.62), being for the whites 46.24, and for the colored 11.09.

The following table shows, for each of the registration states, and for their sum, the death rates from scarlet fever during the census year, per 100,000 of population, with distinction of sex, and of cities and rural districts:

REGISTRATION STATES.	AGGREGATE.			MALES.			FEMALES.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.	Total.	Cities.	Rural.
Total	13.05	16.00	8.53	12.53	16.10	7.25	13.55	15.91	9.83
Connecticut	10.85	11.28	10.55	8.93	11.16	7.36	12.74	11.39	13.72
Delaware	10.68	13.02	9.34	10.52	16.23	7.30	10.85	9.80	11.47
District of Columbia	7.81	7.81	.....	4.56	4.56	.....	10.76	10.76	.....
Massachusetts	8.66	9.27	6.68	8.64	9.66	5.40	8.69	8.91	7.93
New Hampshire	5.31	8.14	4.13	4.82	7.07	3.72	5.79	8.56	4.56
New Jersey	14.88	19.05	8.15	14.43	19.74	7.61	14.22	18.38	8.69
New York	15.04	20.11	9.20	15.28	20.05	7.83	16.58	20.16	10.61
Rhode Island	10.13	9.00	11.69	12.50	9.99	16.63	7.89	8.64	6.82
Vermont	6.32	3.53	6.58	3.54	.....	3.85	9.20	6.78	9.44

It will be seen from this table that in the cities the death rate from scarlet fever was highest in New York (20.11) and in New Jersey (19.05), and lowest in Vermont (3.53) and in the District of Columbia (7.81). In the rural districts it was highest in Rhode Island (11.69), and lowest in New Hampshire (4.13). It was much higher among the whites than among the colored, both in the cities and the rural districts. In the rural districts it was decidedly higher among females than among males in each state except Rhode Island.

Of 1,970 deaths from scarlet fever among whites in the registration area during the census year, 958 were children of mothers born in the United States, 270 children of mothers born in Ireland, 244 children of mothers

born in Germany, 81 children of mothers born in Canada, 68 children of mothers born in Scandinavia, 18 children of mothers born in Italy, 17 children of mothers born in Scotland, 9 children of mothers born in Hungary, 5 children of mothers born in France, and 3 children of mothers born in Bohemia.

The following table shows, for the registration area and some of its subdivisions, the death rates from scarlet fever among the whites during the census year, per 100,000 of white population, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
Registration area	13.81	9.74	10.26	8.34	6.10	11.48	12.04	19.69	28.12	7.37	12.85	12.26
Cities	18.08	11.84	11.14	6.43	6.14	12.14	12.68	23.16	28.66	7.64	15.01	12.48
States	13.27	10.34	10.36	9.04	6.95	12.41	12.19	14.64	31.74	19.29	11.48	14.32
Cities	20.16	13.50	11.44	6.81	7.30	13.74	13.04	20.83	33.17	21.27	13.75	15.01
Rural	7.58	3.82	6.98	14.47	5.95	6.64	10.82	.....	24.41	.....	.....	10.46
Cities in nonregistration states	16.41	7.28	9.03	5.27	4.10	9.83	10.85	24.83	14.70	.....	22.08	6.77
Cities of 100,000 population and upward	24.36	16.17	13.16	10.07	4.48	13.01	17.28	28.14	32.71	8.17	14.95	15.21

The number of deaths among those having mothers born in Bohemia, France, Hungary, Scotland, and Italy was so small that the ratios derivable therefrom have little scientific value; for the others it will be seen that the death rate from scarlet fever in the registration area was highest among those whose mothers were born in Scandinavia (19.69) and in the United States (13.81), and was lowest among those whose mothers were born in Germany (11.48) and in Ireland (10.26.)

The following table shows, for the registration area and some of its subdivisions, the death rates from scarlet fever during the census year in each of four age groups, per 100,000 population, of corresponding ages, with distinction of sex:

AREAS.	UNDER 1 YEAR.			UNDER 5 YEARS.			5 TO 15 YEARS.			15 YEARS AND OVER.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
Registration area	42.21	40.24	44.22	88.43	84.49	92.46	20.77	19.53	22.01	0.92	0.89	0.96
Cities	42.69	39.82	45.64	98.45	94.50	102.48	21.98	21.07	22.28	0.92	0.96	0.87
States	50.45	44.80	56.10	87.42	82.30	92.53	20.42	19.30	21.56	1.00	0.96	1.04
Cities	55.02	46.48	65.58	108.44	102.84	114.11	22.79	23.73	21.84	1.04	1.18	0.91
Rural	40.26	41.93	38.53	51.36	47.64	55.20	16.90	12.82	21.14	0.95	0.65	1.25
Cities in nonregistration states	31.12	34.01	28.17	89.82	87.35	92.36	21.27	19.88	22.66	0.80	0.77	0.83
Cities of 100,000 population and upward	40.02	37.36	42.75	105.70	98.94	112.58	25.54	24.86	26.21	0.99	0.83	1.15
Metropolitan district	54.44	39.06	69.33	128.41	116.66	140.26	29.35	30.06	28.62	1.43	1.06	1.79

It will be seen from this table that the greatest mortality from scarlet fever occurred in children under 5 years of age in the cities (98.45), and especially in the cities in the registration states (108.44). In each age group the death rate from this disease was higher among females than among males, except in the metropolitan district, where in those 5 to 15 years of age it was, for males, 30.06; for females, 28.62, per 100,000 of population of this age group.

The combined relations of age and race to the death rates from scarlet fever are indicated in the following table, showing the number of deaths in each of two age groups, and the death rates per 100,000 population of corresponding ages, with distinction of color, and for the whites, of birthplaces of mothers, the data being derived from a combination of the returns from Boston, Brooklyn, Cincinnati, New York city, the District of Columbia, and the state of New Jersey, for the census year:

COLOR AND BIRTHPLACES OF MOTHERS.	UNDER 5 YEARS.		5 TO 15 YEARS.	
	Deaths.	Rate.	Deaths.	Rate.
White	551	109.49	216	25.63
Colored	6	38.26	5	15.43
Birthplaces of mothers (white):				
United States	244	98.78	103	25.20
England and Wales	19	111.33	12	34.61
Ireland	97	146.91	38	25.22
Germany	87	108.45	40	24.85
Canada	8	107.69	3	22.34
Scandinavia	13	105.84	2	25.94

This table indicates that for children under 5 years of age the death rate per 100,000 due to scarlet fever was much higher among the whites (109.49) than among the colored (38.26), and that among the whites it was higher among the children of Irish mothers (146.91) than it was among those whose mothers were born in the United States (98.78) or those whose mothers were born in Germany (108.45).

For further details with regard to death rates from scarlet fever in large cities, see Part II of this report, page 75.

Out of each 100,000 deaths from all causes, excluding stillbirths, in the United States during the census year, 740 were reported as due to scarlet fever, the corresponding figures in 1880 having been 2,165, and in 1870, 4,128; in England and Wales the corresponding proportion in 1890 was 1,240, and in 1880, 3,300; in Austria, in 1890, it was 1,746; in Prussia, 1,208; in Sweden, 2,911; in Scotland, 935; in Italy, 922; in Belgium, 840; in Switzerland, 647; and in Ireland, 321.

The number of deaths due to scarlet fever in children under 15 years of age per 1,000 of all deaths from known causes occurring under 15 years of age in the United States was, for the whites, 14.91; for the colored, 2.59; for the Chinese, 15.38; and for Indians, 6.10; in the registration area the corresponding figure was 14.51.

The following table shows, for the United States and for the registration area and some of its subdivisions, the proportion of deaths from scarlet fever, during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of color, sex, general nativity, and parental nativity:

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
The United States	7.40	8.26	7.63	8.98	9.89	8.32	13.28	1.78	1.38	1.52	1.24
Registration area	7.03	7.51	6.81	8.28	9.76	8.31	10.47	1.43	0.95	0.84	1.06
Cities	7.34	7.93	7.20	8.66	10.03	10.25	10.39	1.51	0.88	0.74	1.03
States	6.77	6.94	6.35	7.57	8.09	7.67	10.54	1.41	1.00	1.59	2.72
Cities	7.27	7.48	7.06	7.94	10.14	9.74	10.46	1.55	1.85	1.32	2.49
Rural	5.67	5.74	4.77	6.78	6.72	5.60	10.07	0.80	2.10	2.07	1.47
Cities in nonregistration states	7.42	8.46	7.56	9.52	11.17	11.60	10.21	1.46	0.60	0.57	0.62
Cities of 100,000 population and upward	7.96	8.46	.....	.....	11.53	11.36	10.97	1.77	1.25	.....	.....
Metropolitan district, 6 years	18.30	18.57	17.28	20.03	25.07	22.85	27.55	3.80	4.11	3.10	5.23

This table indicates that the proportion of deaths from scarlet fever was nearly the same in the United States as a whole (7.40) as it was in the registration area (7.03), and that in both areas it was much greater among the white than among the colored, and somewhat greater among children having one or both parents foreign born than among those whose parents were native born.

The following table shows, for the United States, and for the registration area and some of its subdivisions, the proportion of deaths from scarlet fever among the whites during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
The United States	10.11	7.44	5.05	6.62	5.18	8.35	8.98	15.21	10.15	5.04	5.10	8.00
Registration area	10.12	5.92	4.88	5.16	3.75	6.74	7.47	12.62	12.59	2.74	5.06	6.29
Cities	12.10	6.83	4.87	3.78	3.62	6.87	6.95	14.34	11.04	2.78	5.35	6.06
States	9.20	6.13	4.77	5.30	4.12	6.93	7.43	8.56	14.21	6.42	4.32	8.30
Cities	11.05	7.38	4.75	3.67	4.03	7.16	6.82	10.92	13.51	6.65	4.59	8.15
Rural	6.72	2.74	4.93	10.77	4.41	5.35	8.00	.....	22.22	.....	.....	9.71
Cities in nonregistration States	10.68	4.93	5.74	4.30	2.77	6.36	7.87	17.66	6.58	.....	12.74	2.66
Cities of 100,000 population and upward	12.92	9.02	5.12	5.64	2.45	6.99	8.25	16.12	14.20	2.85	5.10	7.00

This table indicates that in the United States as a whole, as well as in the registration area, the greatest proportion of deaths from scarlet fever among the whites occurred in the children of mothers born in Scandinavia and of mothers born in Hungary, and that the least proportion occurred in children of mothers born in Ireland and Bohemia.

The following table shows the proportion of deaths from scarlet fever, at certain ages and groups of ages, per 1,000 deaths at all ages from this cause, in 1880 and in 1890, with distinction of sex:

AGES.	1880		1890		AGES.	1880		1890	
	Males.	Females.	Males.	Females.		Males.	Females.	Males.	Females.
Total under 5 years	650.62	589.60	671.35	620.66	35 to 40 years	0.86	2.03	2.05	3.97
Under 1 year	100.83	73.36	100.31	83.42	40 to 45 years	1.10	1.46	2.05	2.32
1 year	137.71	123.78	157.14	145.32	45 to 50 years	0.49	0.49	2.40	0.66
2 years	161.36	145.51	152.60	148.30	50 to 55 years	0.74	0.49	1.37	1.66
3 years	141.14	130.74	144.47	137.04	55 to 60 years	0.25	0.49	2.05	1.32
4 years	109.78	116.21	116.74	106.59	60 to 65 years	0.49	0.12	0.34	1.32
5 to 10 years	255.33	278.81	228.35	257.20	65 to 70 years	0.12	0.73	1.03	1.32
10 to 15 years	61.99	80.57	50.67	58.92	70 to 75 years	0.37	0.61	0.34	0.99
15 to 20 years	14.58	21.48	10.17	23.83	75 to 80 years	0.37	0.12	1.03	1.66
20 to 25 years	5.76	11.84	7.19	8.61	80 to 85 years	0.12	0.24	0.34	0.33
25 to 30 years	4.29	6.84	5.14	7.04	85 to 90 years	.....	.....	.....	0.33
30 to 35 years	2.33	3.17	4.79	6.29	90 to 95 years	.....	.....	0.34	0.33
					95 years and over	.....	.....	.....	0.33

It will be seen from this table that in each census and in both sexes more than half of the deaths from scarlet fever occurred in children under 5 years of age, and that 90 per cent occurred in children under 15 years of age.

The average age of those dying from scarlet fever in the United States in 1890 was 5.90 years; in the registration states it was 5.77 years; in 1880 in the United States it was 5 years.

The following table shows for each grand group the proportion of deaths from scarlet fever, during the census year, per 1,000 deaths from known causes, with distinction of sex and color, of rural districts and cities, and of children of mothers born in Ireland and in Germany:

GRAND GROUPS.	Total.	RURAL.		CITIES.		White.	Colored.	MOTHERS BORN IN—	
		Males.	Females.	Males.	Females.			Ireland.	Germany.
1. North Atlantic Coast region	3.90	3.56	4.31	3.86	3.93	3.94	1.83	3.06	2.97
2. Middle Atlantic Coast region	7.09	4.01	5.98	6.95	8.33	7.63	2.13	5.73	6.98
3. South Atlantic Coast region	0.53	0.42	1.06	.....	.....	0.39	0.62	.....	.....
4. Gulf Coast region	1.32	1.91	2.74	.....	0.51	1.38	1.23	.....	.....
5. Northeastern hills and plateaus	5.14	3.73	5.27	6.13	6.72	5.17	.....	4.82	7.33
6. Central Appalachian region	9.99	9.94	12.25	5.18	7.01	10.13	3.97	5.83	4.99
7. Region of the Great Northern Lakes	8.99	11.29	12.01	6.90	8.73	9.09	1.13	4.27	9.59
8. Interior plateau	8.22	5.96	8.57	8.67	9.69	9.19	1.18	6.61	9.62
9. Southern Central Appalachian region	2.89	3.09	3.21	.....	1.57	3.15	1.99	.....	.....
10. Ohio River belt	5.22	5.93	4.87	4.91	4.74	5.67	0.32	1.94	2.33
11. Southern Interior plateau	1.09	1.38	0.81	1.55	.....	1.91	0.42	.....	.....
12. South Mississippi River belt	2.26	1.90	2.81	1.11	3.18	3.26	1.63	.....	.....
13. North Mississippi River belt	11.76	10.09	11.44	10.79	15.64	12.29	2.86	5.02	8.44
14. Southwest Central region	2.11	1.82	2.11	2.88	7.60	2.25	1.48	.....	0.90
15. Central region, plains and prairies	8.42	8.60	8.43	7.23	8.19	9.30	1.63	3.66	5.89
16. Prairie region	13.21	13.32	13.49	7.97	7.25	13.47	0.76	6.98	13.98
17. Missouri River belt	8.87	8.33	12.08	4.95	8.03	9.69	2.71	.....	3.03
18. Region of the Western plains	11.59	13.14	13.70	5.08	7.55	12.12	1.99	10.93	6.29
19. Heavily timbered region of the Northwest	11.05	9.20	13.10	.....	.....	11.91	.....	2.68	13.01
20. Cordilleran region	17.74	13.66	20.26	2.62	.....	18.60	7.42	15.36	14.78
21. Pacific Coast region	5.16	5.73	11.44	2.54	3.77	5.48	0.85	2.76	5.63

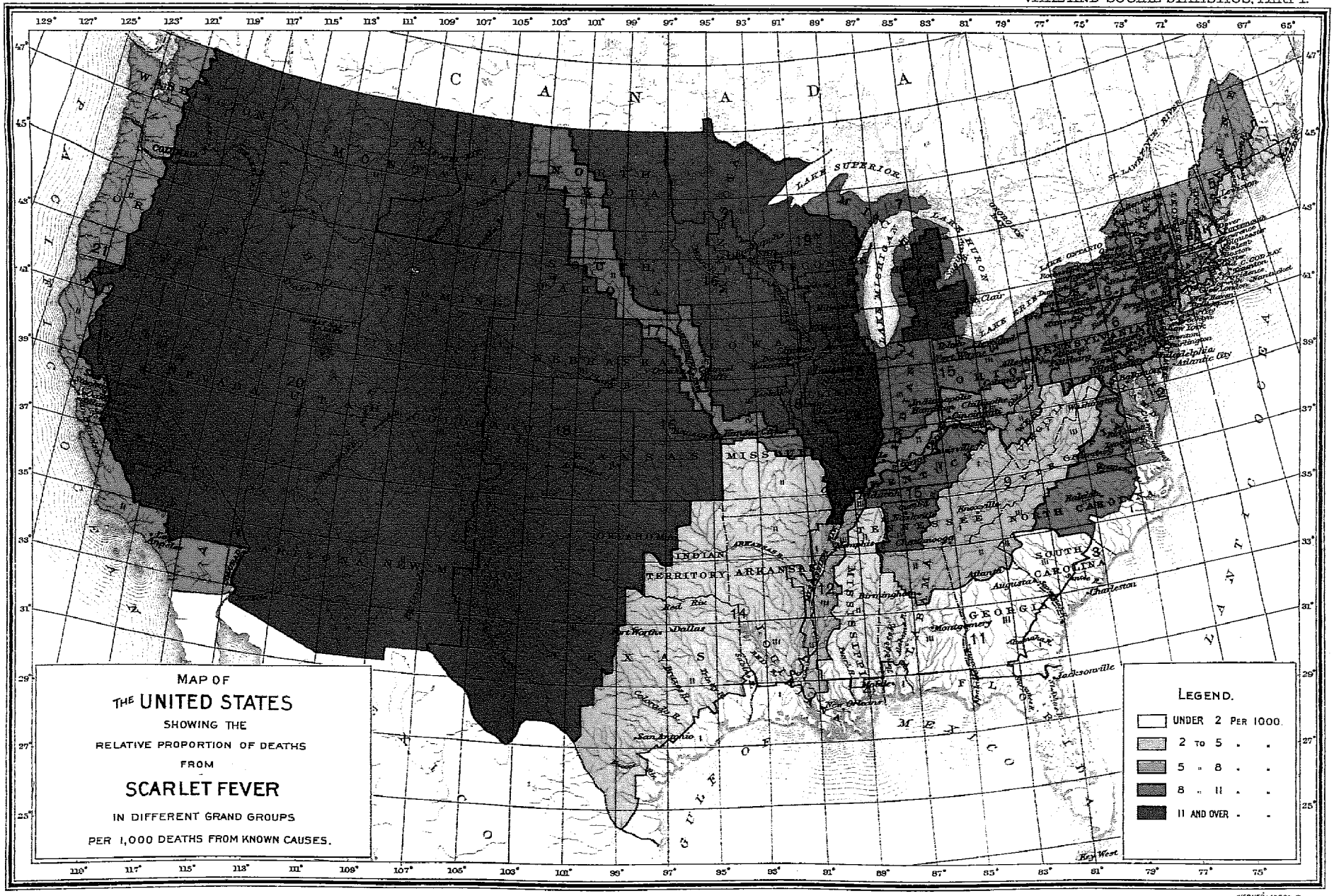
The geographical distribution of deaths from scarlet fever in the several grand groups is shown by map No. 2.

It will be seen from this table and map that the proportion of deaths due to scarlet fever to deaths from known causes was greatest in the Cordilleran region (17.74), the Prairie region (13.21), and the North Mississippi River belt (11.76), and least in the southern portions of the United States.

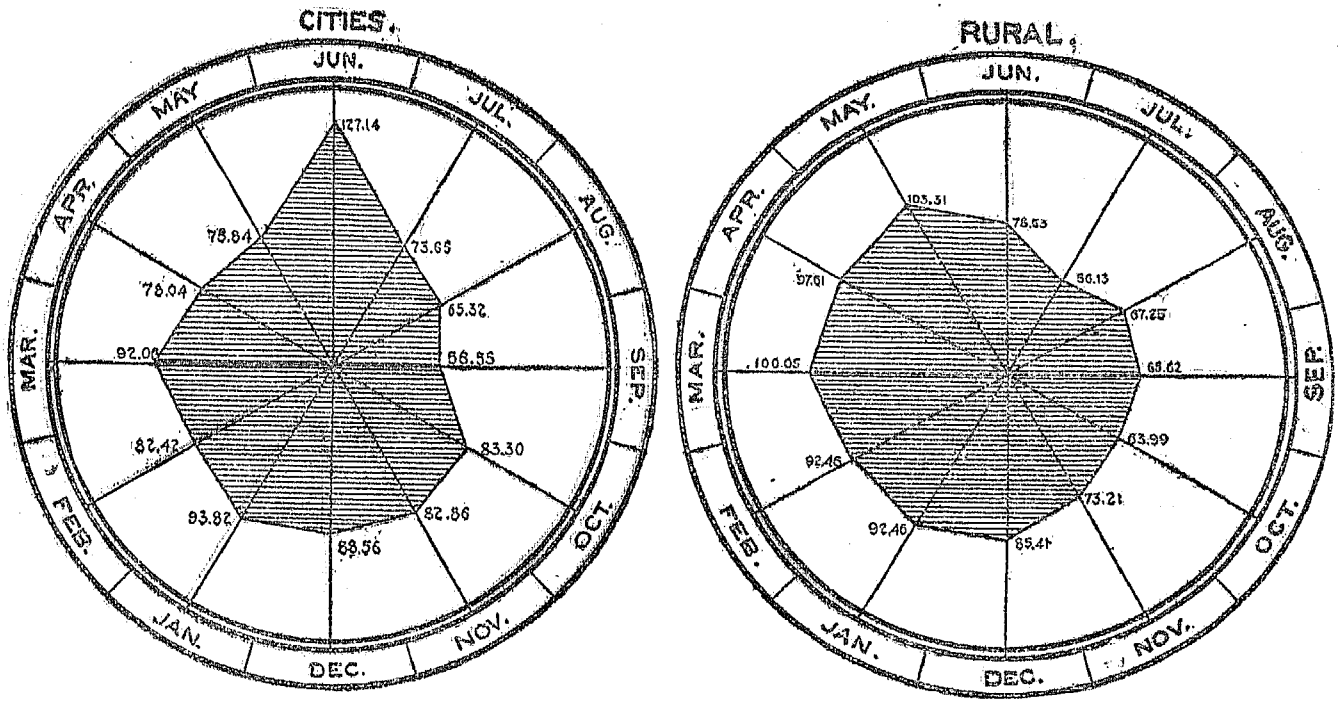
The geographical distribution of deaths from scarlet fever by state groups, per 1,000 deaths from known causes in each group is shown by map No. 3.

The following table shows, for the United States, the number of deaths from scarlet fever in each month of the census year, and the proportion in each month per 1,000 deaths from this disease, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			PROPORTION IN EACH MONTH PER 1,000 TOTAL DEATHS.		
	United States.	Cities.	Rural.	United States.	Cities.	Rural.
Total	5,969	2,281	3,688	.....	.....	.....
June	580	290	290	97.17	127.14	78.63
July	375	168	207	62.82	73.65	56.13
August	397	149	248	66.51	65.32	67.25
September	371	129	242	62.15	56.55	65.62
October	426	100	326	71.37	43.30	63.99
November	459	189	270	76.90	82.86	73.21
December	517	202	315	86.61	88.56	85.41
January	555	214	341	92.98	93.82	92.46
February	520	188	341	88.62	82.42	92.46
March	579	210	369	97.00	92.06	100.05
April	538	178	360	90.13	78.04	97.61
May	554	173	381	92.81	75.84	103.31
Unknown	89	1	88	14.91	0.44	23.86


MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
FROM
SCARLET FEVER
IN DIFFERENT GRAND GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.
LEGEND.
UNDER 2 PER 1000.
2 TO 5 " "
5 " 8 " "
8 " 11 " "
11 AND OVER " "
CANADA
MEXICO
INDIAN TERRITORY
ARKANSAS
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO

The relative proportion of deaths from scarlet fever in each month in the cities and in the rural districts, and the difference in the proportion of deaths in the two areas, is shown in the following diagram:

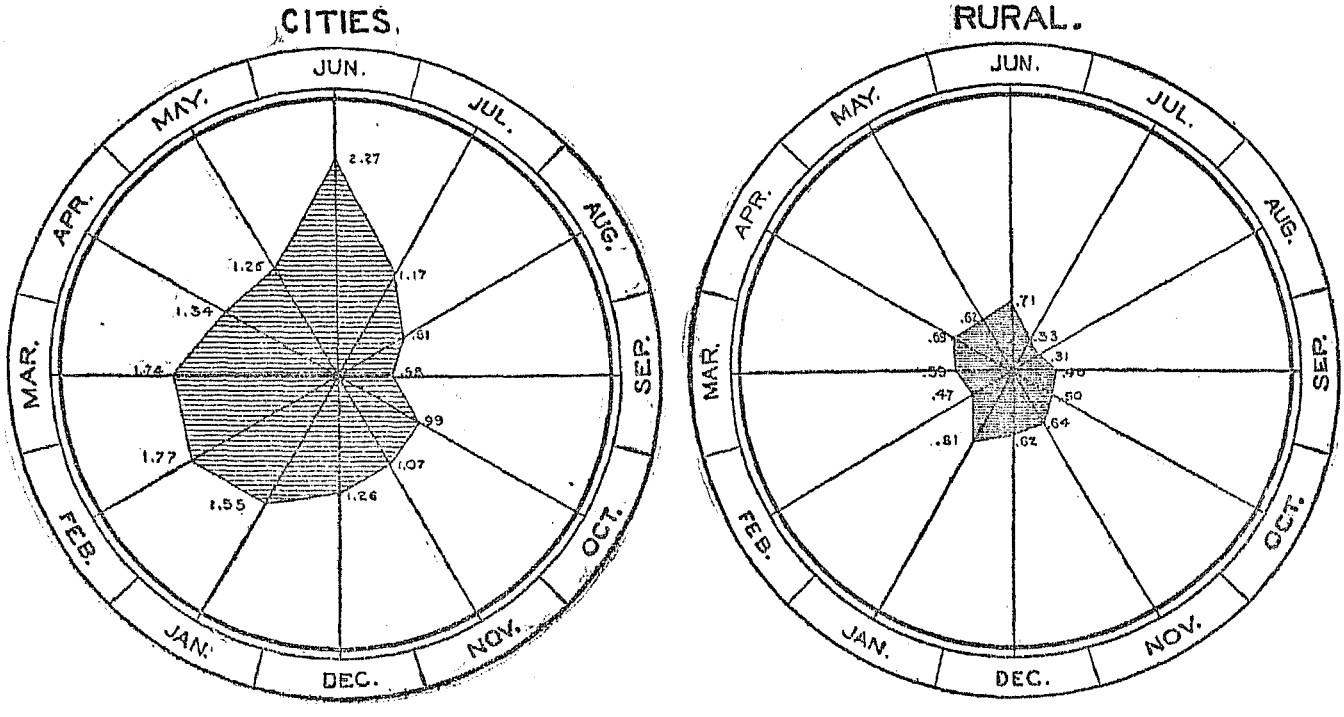


It will be seen from this table and diagram that the greatest proportion of deaths from scarlet fever occurred in the months of March and of June, but the distribution as between cities and rural districts was such as to indicate that seasons had apparently little effect upon the mortality. The greatest proportion occurred in the cities in June, and in the rural districts in May and March.

The following table shows, for the sum of Grand Groups 1, 2, and 5, which were mainly registration areas, the number of deaths from scarlet fever in each month during the census year, and the death rates per 100,000 of population, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			RATE.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.
June	172	142	30	1.64	2.27	0.71
July	87	73	14	0.83	1.17	0.33
August	64	51	13	0.61	0.81	0.31
September	55	36	19	0.52	0.58	0.43
October	83	62	21	0.79	0.99	0.50
November	94	67	27	0.90	1.07	0.64
December	105	79	26	1.00	1.26	0.62
January	131	97	34	1.25	1.55	0.81
February	131	111	20	1.25	1.77	0.47
March	134	109	25	1.28	1.74	0.59
April	113	84	29	1.08	1.34	0.69
May	105	79	26	1.00	1.26	0.62

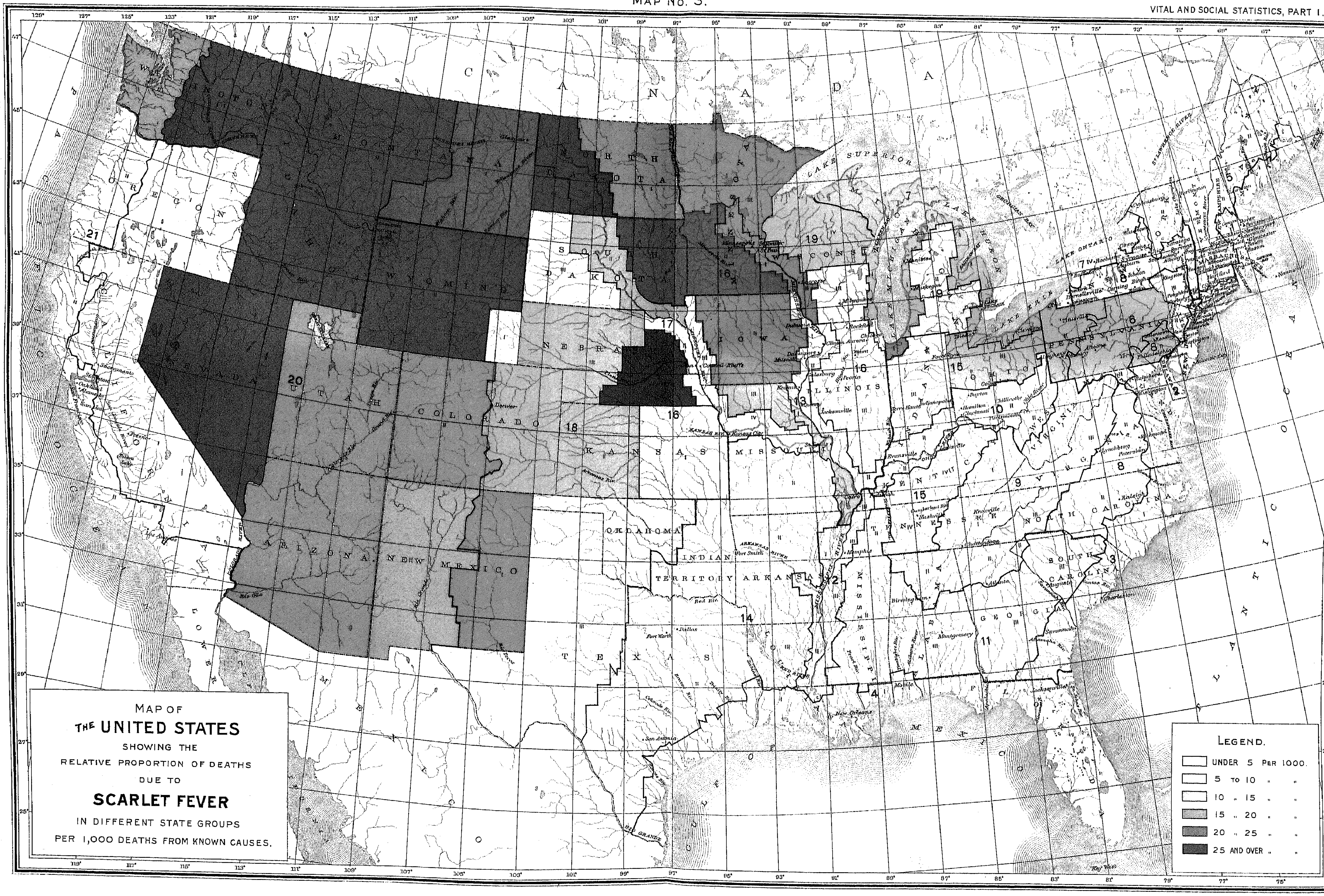
The death rates in each month, as given in the preceding table, and the relative magnitude of the rates in the cities and rural districts are shown graphically in the following diagram:



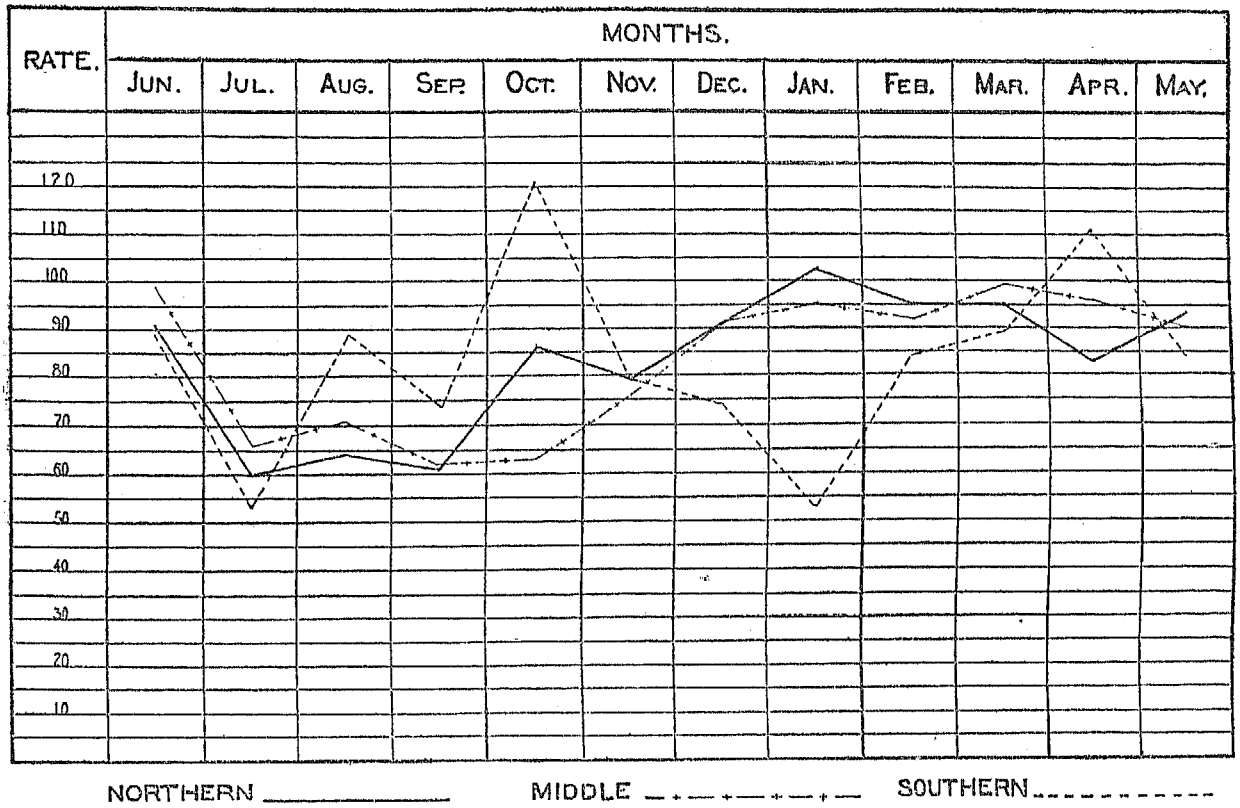
It will be seen from this table and the diagram that the highest death rates from scarlet fever occurred in June, both in the cities and in the rural districts, and that the lowest death rates occurred in August, September, and October.

The following table shows for three divisions of grand groups, namely, northern, middle, and southern, the number of deaths reported as due to scarlet fever in children under 5 years of age in each month during the census year, and the proportion in each month per 1,000 of all deaths from this disease in children under 5 years of age:

MONTHS.	NORTHERN REGION, GRAND GROUPS 1, 5, 7, 13, 17, AND 19.		MIDDLE REGION, GRAND GROUPS 2, 6, 8, 10, 15, 16, 18, 20, AND 21.		SOUTHERN REGION, GRAND GROUPS 3, 4, 9, 11, 12, AND 14.	
	Deaths.	Proportion.	Deaths.	Proportion.	Deaths.	Proportion.
June	96	91.08	250	98.70	17	89.47
July	63	59.77	167	65.93	10	52.63
August	67	63.57	179	70.67	17	89.47
September	64	60.72	158	62.38	14	73.68
October	91	86.34	159	62.77	23	121.05
November	83	78.75	192	75.80	15	78.95
December	96	91.08	230	90.80	14	73.68
January	108	102.47	241	95.14	10	52.63
February	100	94.88	234	92.38	16	84.21
March	100	94.88	252	99.49	17	89.47
April	88	83.49	244	96.33	21	110.53
May	98	92.98	227	89.62	16	84.21


MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
DUE TO
SCARLET FEVER
IN DIFFERENT STATE GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.
LEGEND.
UNDER 5 PER 1000.
5 TO 10 " "
10 " 15 " "
15 " 20 " "
20 " 25 " "
25 AND OVER " "

The variations in the proportions of deaths in the several divisions, month by month, are shown in the following diagram:



It will be seen from this table and diagram that the differences in the proportion of deaths in different months of the year from scarlet fever were much less than from measles or whooping cough. The proportion of deaths in the northern region from this cause was greatest in January; in the southern region it was greatest in October; and in the middle region it was greatest in March. In the northern region it was least in July; in the southern region in July and January; and in the middle region in September and October.

MEASLES.

The total number of deaths reported as due to measles in the United States during the census year was 9,256, of which 4,595 were of males and 4,661 were of females. In the registration area the number of deaths reported as due to this disease was, males, 1,325; females, 1,337; total, 2,662; giving a death rate of 13.54 per 100,000 of population.

In 1890 the death rate from measles per 100,000 of population was, in England and Wales, 43.8; in Scotland, 62.6; in Ireland, 15.4; in Belgium, 68.9; in Prussia, 40.6; in Austria, 64.00; in Italy, 47.7. The death rate from this disease was therefore less in that part of the United States having registration records than in any of the above named countries.

During the 10 years, 1880 to 1889, the death rate from measles per 100,000 of population was, in England and Wales, 44.6; in Ireland, 19.5; in Scotland, 36.5; in Sweden, 18.8; in Norway, 10.6; in Prussia, 41.4; in Austria, 50.4; in Saxony, 26.1; in Massachusetts, 11.2; in Connecticut, 9.2; in Rhode Island, 10.2; and in New Jersey, 10.8.

The following table shows, for the registration area and some of its subdivisions, the death rates from measles, during the census year, per 100,000 of population, with distinction of color, sex, general nativity, and parental nativity:

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
Registration area	13.54	13.23	13.19	13.27	17.08	11.23	24.63	2.65	19.58	20.01	19.17
Cities	15.60	15.32	15.45	15.19	20.85	15.87	27.66	2.60	20.05	20.59	19.53
States	10.71	10.71	10.75	10.67	13.37	8.67	20.89	3.02	10.66	11.34	10.01
Cities	13.13	13.25	13.71	12.81	18.13	12.08	23.86	3.05	8.95	10.03	7.98
Rural	7.00	6.86	6.40	7.33	7.59	6.06	12.88	2.92	14.61	14.10	15.15
Cities in nonregistration states	17.87	17.36	17.10	17.63	23.36	24.03	36.41	2.10	23.14	23.40	22.88
Cities of 100,000 population and upward	17.81	17.93	.....	.....	25.31	21.86	34.41	2.95	15.38	.....	.....
Metropolitan district, 6 years	29.11	29.41	30.66	28.19	44.30	31.70	52.50	4.43	12.36	14.87	9.95

It will be seen from this table that the death rate from measles was higher among the colored (19.58) than among the whites (13.23); that it was nearly the same among the males (white, 13.19; colored, 20.01) as it was among the females (white, 13.27; colored, 19.17); and that it was much higher among the native born whites (17.08) than among the foreign born whites (2.65), owing largely to the much greater proportion of young children in the former class. Among the native born whites having one or both parents foreign born, the death rate from this cause (24.63) was more than twice as high as it was among those both parents of whom were native born (11.23). In the registration states the number of deaths reported as due to this disease was, males, 632; females, 640; total, 1,272; giving a death rate of 10.71 per 100,000 of population. In these states the death rate from measles was much higher in the cities (13.13) than in the rural districts (7.00), and it was highest of all in the metropolitan district for the 6-year period (29.11), being for this locality much higher among the whites (29.41) than among the colored (12.36), owing to the much smaller proportion of children in the latter group.

The following table shows, for each of the registration states, and for their sum, the death rates from measles during the census year, per 100,000 of population, with distinction of sex, and of cities and rural districts:

REGISTRATION STATES.	AGGREGATE.			MALES.			FEMALES.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.	Total.	Cities.	Rural.
Total	10.71	13.13	7.00	10.76	13.62	6.54	10.65	12.67	7.47
Connecticut	5.76	7.73	4.36	6.49	10.51	3.68	5.04	5.06	5.03
Delaware	18.40	27.07	13.08	21.03	29.21	16.44	15.68	26.13	9.56
District of Columbia	2.60	2.60	.....	2.74	2.74	.....	2.48	2.48	.....
Massachusetts	4.33	4.26	4.58	3.77	3.26	5.40	4.86	5.19	3.77
New Hampshire	4.25	9.05	2.26	5.36	13.43	2.23	3.16	5.14	2.28
New Jersey	12.66	16.36	7.83	12.21	14.56	9.19	13.12	18.14	6.44
New York	12.62	16.60	6.19	12.66	17.57	4.99	12.58	15.66	7.43
Rhode Island	34.44	29.99	40.57	35.11	35.46	34.65	33.81	24.95	46.39
Vermont	6.02	14.14	5.26	7.09	22.15	5.78	4.91	6.78	4.72

It will be seen from the preceding table that the death rate from measles, in the aggregate, was highest in Rhode Island (34.44), and lowest in the District of Columbia (2.60). It was highest of all among the colored males in Rhode Island (84.22). There was little difference in the aggregate death rates of the whites (10.71) and the colored (10.66). In Massachusetts, New Hampshire, and Vermont there were no deaths from this disease among the colored, but where it did occur in epidemic form among the colored it was more fatal than among the whites, as for instance, in Delaware (42.21) and in Rhode Island (65.39).

Of 1,889 deaths from measles in whites in the registration area during the census year, 700 were children of mothers born in the United States, 249 children of mothers born in Germany, 190 children of mothers born in Ireland, 133 children of mothers born in Italy, 87 children of mothers born in Canada, 64 children of mothers born in England and Wales, 21 each children of mothers born in Scandinavia and in Bohemia, 14 children of mothers born in Scotland, 10 children of mothers born in Hungary, and 5 children of mothers born in France.

The following table shows, for the registration area and some of its subdivisions, the death rates from measles among the whites during the census year, per 100,000 of white population, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
Registration area	10.09	9.16	7.14	6.87	6.10	11.72	12.93	8.61	31.25	51.59	94.96	24.28
Cities	13.76	10.09	8.04	7.72	1.53	12.68	11.77	9.05	35.83	53.49	105.38	25.74
States	8.26	8.38	5.81	5.43	8.68	8.37	13.35	7.32	31.74	19.29	109.08	19.41
Cities	11.39	9.26	6.46	5.96	2.45	9.22	12.23	9.26	37.01	21.27	124.72	20.64
Rural	5.07	6.55	3.70	4.13	23.78	4.09	15.14	2.74	.....	.....	29.84	12.50
Cities in nonregistration states	18.92	12.38	15.86	13.18	.....	17.69	9.50	9.93	29.39	71.55	.....	37.25
Cities of 100,000 population and upward	19.52	13.76	11.01	9.49	2.24	13.90	12.09	13.33	36.80	57.22	125.55	29.38

The number of deaths from measles among those having mothers born in Scotland, in Hungary, and in France was so small that the ratios derivable therefrom have little scientific value. For the others, it will be seen that the death rate from this disease in the registration area was highest among those whose mothers were born in Italy (94.96) and in Bohemia (51.59), and that it was lowest among the children of mothers born in Ireland (7.14) and in Scandinavia (8.61). It was lower among the children of mothers born in the United States (10.09) than among the children of mothers born in Germany (11.72). In the cities of 100,000 population and upward, the death rate from this disease among the children of Italian mothers was more than twice as high as it was among those of mothers born in any other country, being 125.55.

The following table shows, for the registration area and some of its subdivisions, the death rates from measles during the census year in each of four age groups, per 100,000 population of corresponding ages, with distinction of sex:

AREAS.	UNDER 1 YEAR.			UNDER 5 YEARS.			5 TO 15 YEARS.			15 YEARS AND OVER.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
Registration area	168.11	172.68	163.42	112.49	112.95	112.02	6.48	6.46	6.50	1.17	0.83	1.50
Cities	186.18	186.80	185.55	128.57	128.50	128.68	7.20	7.46	6.94	0.92	0.71	1.11
States	147.21	155.06	139.15	91.83	92.33	91.31	4.52	4.85	4.19	1.27	0.91	1.62
Cities	174.74	175.86	173.59	114.46	113.99	114.93	4.75	5.00	5.02	0.82	0.73	0.91
Rural	95.92	116.48	74.66	53.01	55.50	50.44	4.17	3.51	5.06	1.06	1.18	2.74
Cities in nonregistration states	196.20	196.35	196.04	140.76	141.06	140.45	9.32	8.82	9.82	1.00	0.70	1.32
Cities of 100,000 population and upward	203.45	200.69	210.40	147.69	148.88	146.49	7.19	6.95	7.26	0.43	0.27	0.59
Metropolitan district	235.48	217.27	254.20	158.11	160.47	155.73	4.49	5.12	3.86	0.43	0.44	0.43

It will be seen from this table for the children under 1 year of age the death rate from measles, per 100,000, was 168.11 for the entire registration area, being a little higher for males (172.68) than for females (163.42), and decidedly higher in the cities of the registration states (174.74) than in the rural districts of the same states (95.92).

The highest death rate occurred in the metropolitan district, being 235.48 per 100,000 of those under 1 year of age and 158.11 per 100,000 of those under 5 years of age.

The combined relations of age and race to the death rates from measles are indicated in the following table showing the number of deaths in each of two age groups, and the death rates per 100,000 population of corresponding ages, with distinction of color, and, for the whites, of birthplaces of mothers, the data being derived from a combination of the returns from Boston, Brooklyn, Cincinnati, New York city, the District of Columbia, and the state of New Jersey, for the census year:

COLOR AND BIRTHPLACES OF MOTHERS.	UNDER 1 YEAR.		UNDER 5 YEARS.	
	Deaths.	Rate.	Deaths.	Rate.
White	217	207.23	710	146.41
Colored	8	83.68	13	82.90
Birthplaces of mothers (white):				
United States	63	119.68	239	96.76
England and Wales	7	192.41	27	158.20
Ireland	18	126.02	69	104.51
Germany	27	161.39	101	125.90
Italy	35	940.97	123	818.09

This table indicates that for the children under 5 years of age the death rate per 100,000 due to measles was much higher among the whites (146.41) than among the colored (82.90); that among the whites it was excessively high among the children of mothers born in Italy (818.09), and comparatively low among the children of mothers born in the United States (96.76). For further details with regard to death rates from measles in large cities, see Part II of this report, page 104.

Out of 100,000 deaths from all causes, excluding stillbirths, in the United States during the year ending May 31, 1890, 1,057 were reported as due to measles; the corresponding figures in 1880 having been 1,066 and in 1870 1,876.

In England and Wales the corresponding proportion was 2,243 in 1890 and 2,338 in 1880. In 1890 it was, in Scotland, 3,170; in Ireland, 840; in Prussia, 1,690; in Austria, 2,180; in Belgium, 3,300; and in Italy, 1,800.

The number of deaths due to measles in children under 15 years of age per 1,000 of all deaths from known causes occurring under 15 years of age in the United States was, for the whites, 20.44; for the colored, 26.56; and for Indians, 27.02. In the registration area the corresponding figure was 14.21.

The following table shows, for the United States and for the registration area and some of its subdivisions, the proportion of deaths from measles, during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of color, sex, general nativity, and parental nativity:

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
The United States	11.47	10.89	10.13	11.74	13.16	13.68	13.16	1.84	15.48	15.43	15.53
Registration area	6.98	6.99	6.59	7.44	9.07	6.59	11.58	1.88	6.80	6.60	7.02
Cities	7.51	7.58	7.16	8.00	10.21	8.43	11.93	1.32	6.71	6.52	6.92
States	5.56	5.61	5.30	5.88	7.08	5.05	9.64	1.53	3.93	3.97	3.89
Cities	5.97	6.09	5.90	6.29	8.16	6.08	9.70	1.47	2.80	2.97	2.74
Rural	4.65	4.57	4.18	4.99	5.13	4.02	9.32	1.81	8.39	8.00	8.82
Cities in nonregistration states	9.11	9.30	8.56	10.18	12.47	14.54	18.23	1.13	7.85	7.55	8.18
Cities of 100,000 population and upward	8.27	8.52	.....	.....	11.75	10.07	14.38	1.47	5.01	.....	.....
Metropolitan district, 6 years	11.68	11.81	11.49	12.17	16.51	11.64	19.76	2.05	4.58	5.10	4.00

This table indicates that the proportion of deaths from measles was decidedly greater in the United States as a whole (11.47) than it was in the registration area (6.98), and that in the United States it was decidedly greater among the colored (15.48) than among the whites (10.89).

The following table shows, for the United States and for the registration area and some of its subdivisions, the proportion of deaths from measles among the whites during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
The United States	15.17	6.68	3.81	5.75	4.30	7.04	9.69	9.77	12.40	15.63	35.73	13.02
Registration area	7.40	5.57	3.39	4.25	3.75	6.88	8.03	5.52	13.09	19.16	37.41	12.45
Cities	8.82	5.82	3.52	4.54	0.90	7.18	6.45	5.98	14.03	19.46	37.74	12.50
States	5.72	4.97	2.68	3.18	5.14	4.67	8.14	4.28	14.21	0.42	41.04	11.25
Cities	6.24	5.07	2.68	3.21	1.34	4.81	6.39	4.85	15.44	0.65	41.63	11.21
Rural	5.02	4.70	2.65	3.08	17.62	3.78	12.58	2.20	.....	.....	31.58	11.65
Cities in nonregistration states	10.23	8.37	9.45	10.75	.....	11.44	6.89	7.06	13.16	28.66	.....	14.69
Cities of 100,000 population and upward	10.36	7.07	4.28	5.01	1.23	7.52	5.77	7.04	16.04	19.92	42.81	13.53

This table indicates that in the United States as a whole, as well as in the registration area, the greatest proportion of deaths from measles among the whites occurred in the children of mothers born in Italy, and the least in the children of mothers born in Ireland.

The following table shows the proportion of deaths from measles, at certain ages and groups of ages, per 1,000 deaths at all ages from this disease, in 1880 and in 1890, with distinction of sex:

AGES.	1880		1890		AGES.	1880		1890	
	Males.	Females.	Males.	Females.		Males.	Females.	Males.	Females.
Total under 5 years	712.16	647.30	692.24	631.39	35 to 40 years	7.81	24.02	10.05	23.03
Under 1 year	267.44	230.64	235.41	200.26	40 to 45 years	7.05	13.24	10.49	19.83
1 year	208.26	193.63	229.51	217.50	45 to 50 years	4.03	8.09	3.72	11.21
2 years	125.01	117.40	121.53	113.60	50 to 55 years	4.03	7.11	2.84	9.48
3 years	68.75	63.73	68.20	61.24	55 to 60 years	3.02	4.66	3.28	5.82
4 years	41.80	41.01	37.60	35.78	60 to 65 years	2.77	5.15	3.50	4.96
5 to 10 years	96.20	98.28	95.96	93.34	65 to 70 years	2.27	1.72	1.53	4.96
10 to 15 years	41.80	43.38	44.37	47.64	70 to 75 years	1.26	1.23	1.07	2.37
15 to 20 years	38.28	50.98	50.27	56.26	75 to 80 years	1.26	0.74	2.62	1.51
20 to 25 years	41.80	40.69	41.97	37.94	80 to 85 years	0.25	0.25	1.75	1.20
25 to 30 years	22.66	28.43	20.55	23.71	85 to 90 years	0.25	0.25	0.66	0.22
30 to 35 years	12.84	24.26	12.02	25.03	90 to 95 years	0.25	.....	0.22	0.22
					95 years and over	.....	0.25	.....	.....

It will be seen from this table that in each census and in both sexes over 60 per cent of the deaths from measles occurred in children under 5 years of age, and that over 80 per cent occurred in children under 15 years of age.

The average age of those dying from measles in the United States in 1890 was 8.66 years. In the registration states it was 4.70 years. In 1880, in the United States, it was 7 years.

The following table shows, for each grand group, the proportion of death from measles, during the census year, per 1,000 deaths from known causes, with distinction of sex and color, of rural and cities, and of children of mothers born in Ireland and in Germany:

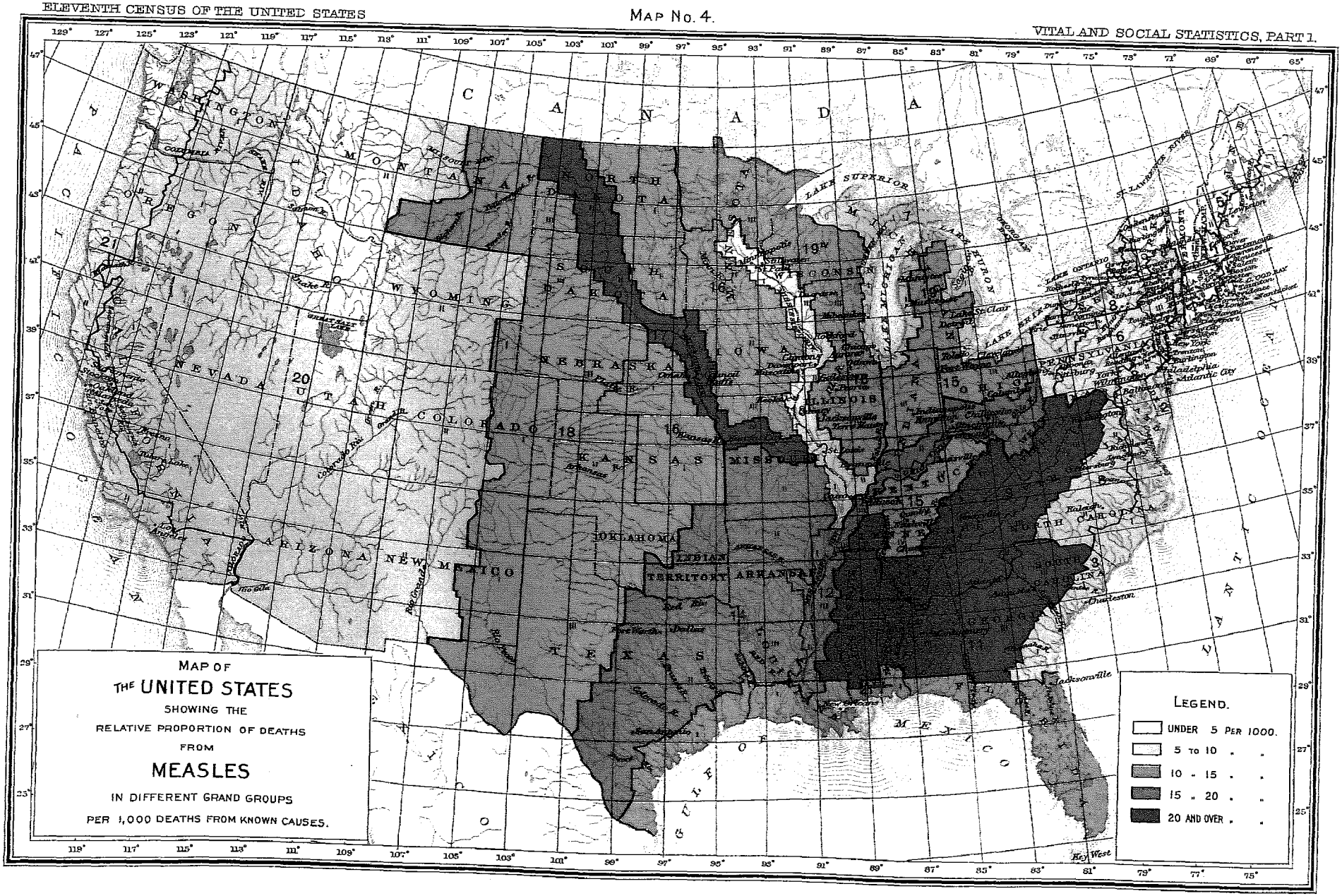
GRAND GROUPS.	Total.	RURAL.		CITIES.		White.	Colored.	MOTHERS BORN IN—	
		Males.	Females.	Males.	Females.			Ireland.	Germany.
1. North Atlantic Coast region	3.79	3.74	5.01	3.72	3.28	3.75	5.79	2.73	2.22
2. Middle Atlantic Coast region	7.87	5.21	5.06	7.92	9.17	8.18	5.01	2.76	4.73
3. South Atlantic Coast region	5.61	6.02	8.45	2.69	.....	6.63	4.97	.....	.....
4. Gulf Coast region	11.53	16.64	18.48	4.72	5.07	11.84	11.06	10.99	.....
5. Northeastern hills and plateaus	3.56	4.13	3.25	2.37	4.28	3.58	.....	1.97	5.49
6. Central Appalachian region	5.75	6.00	6.73	2.45	4.57	5.85	1.32	4.12	2.77
7. Region of the Great Northern Lakes	7.47	9.26	12.01	5.52	6.61	7.55	1.13	9.48	7.52
8. Interior plateau	9.03	9.29	12.25	7.69	7.25	8.63	11.98	6.02	12.97
9. Southern Central Appalachian region	23.25	21.43	23.33	27.67	34.05	23.71	21.67	4.55	10.15
10. Ohio River belt	16.66	18.58	21.52	9.82	11.34	16.83	14.89	8.43	12.70
11. Southern Interior plateau	24.78	25.29	25.10	13.95	10.91	27.32	22.73	.....	11.76
12. South Mississippi River belt	18.72	20.32	21.81	1.11	9.54	17.25	19.65	.....	.....
13. North Mississippi River belt	8.05	12.06	14.24	1.70	3.46	8.23	5.15	3.59	8.69
14. Southwest Central region	17.58	17.10	19.12	7.20	13.03	17.25	19.02	.....	11.74
15. Central region, plains and prairies	12.05	11.87	13.68	6.63	6.83	11.54	15.97	2.44	6.51
16. Prairie region	12.01	11.67	12.95	4.43	4.15	11.90	17.57	4.46	7.18
17. Missouri River belt	20.99	21.04	23.01	17.09	19.28	21.52	16.94	7.60	10.10
18. Region of the Western plains	14.30	11.08	15.93	16.62	17.94	12.67	43.74	5.46	.....
19. Heavily timbered region of the Northwest	14.09	12.97	16.65	.....	.....	14.91	5.35	6.69	14.71
20. Cordilleran region	5.61	4.84	7.34	.....	3.86	5.69	4.64	3.84	4.93
21. Pacific Coast region	6.88	8.03	11.79	2.88	7.01	7.33	0.85	1.66	4.02

The geographical distribution of deaths from measles in the several grand groups is shown in map No. 4.

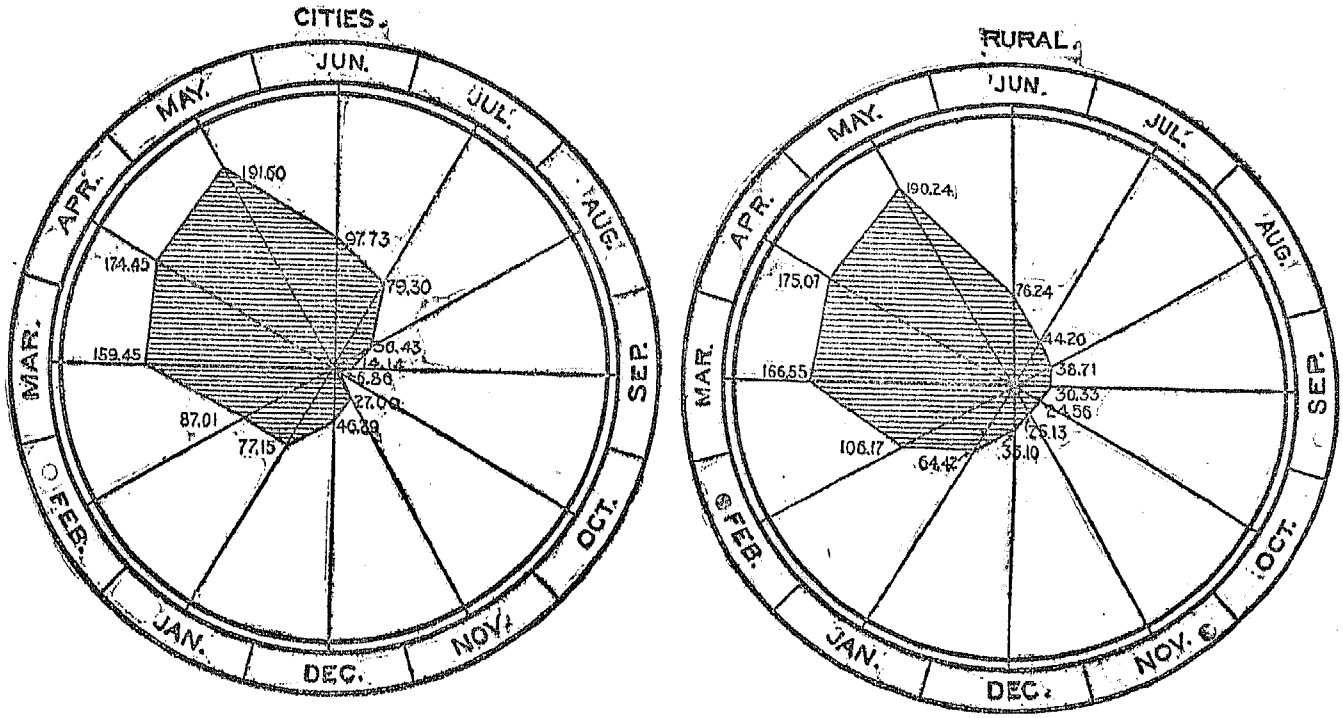
The preceding table and map indicate that the greatest proportion of deaths from measles in the rural districts occurred in the southern regions, and the least in the North Atlantic Coast, the Northeastern hills and plateaus, and the Cordilleran regions. This table should be compared with the corresponding one for 1880 given in the Tenth Census Reports, volume XII, page lv.

The following table shows for the United States the number of deaths from measles in each month during the census year, and the proportion in each month per 1,000 deaths from this cause, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			PROPORTION IN EACH MONTH PER 1,000 TOTAL DEATHS.		
	United States.	Cities.	Rural.	United States.	Cities.	Rural.
Total	9,256	2,333	6,923	.....	.....	.....
June	765	228	528	81.68	97.73	76.27
July	491	185	306	53.05	79.30	44.20
August	353	85	268	38.14	36.43	38.71
September	243	33	210	26.25	14.14	30.33
October	186	16	170	20.10	6.86	24.56
November	237	63	174	25.61	27.00	25.13
December	351	108	243	37.92	46.29	35.10
January	626	180	446	67.63	77.15	64.42
February	938	203	735	101.34	87.01	106.17
March	1,525	372	1,153	164.76	159.45	166.55
April	1,619	407	1,212	174.91	174.45	175.07
May	1,764	447	1,317	190.58	191.60	190.24
Unknown	167	6	161	18.04	2.57	23.26


MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
FROM
MEASLES
IN DIFFERENT GRAND GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.
LEGEND.
UNDER 5 PER 1000.
5 TO 10 " "
10 - 15 " "
15 " 20 " "
20 AND OVER " "
CANADA
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
INDIAN TERRITORY
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
MEXICO
GULF OF MEXICO
ATLANTIC OCEAN
PACIFIC OCEAN
Key West

The relative proportion of deaths from this cause in each month in the cities and in the rural districts, and the difference in the proportion of deaths in the two areas, is shown in the following diagram:

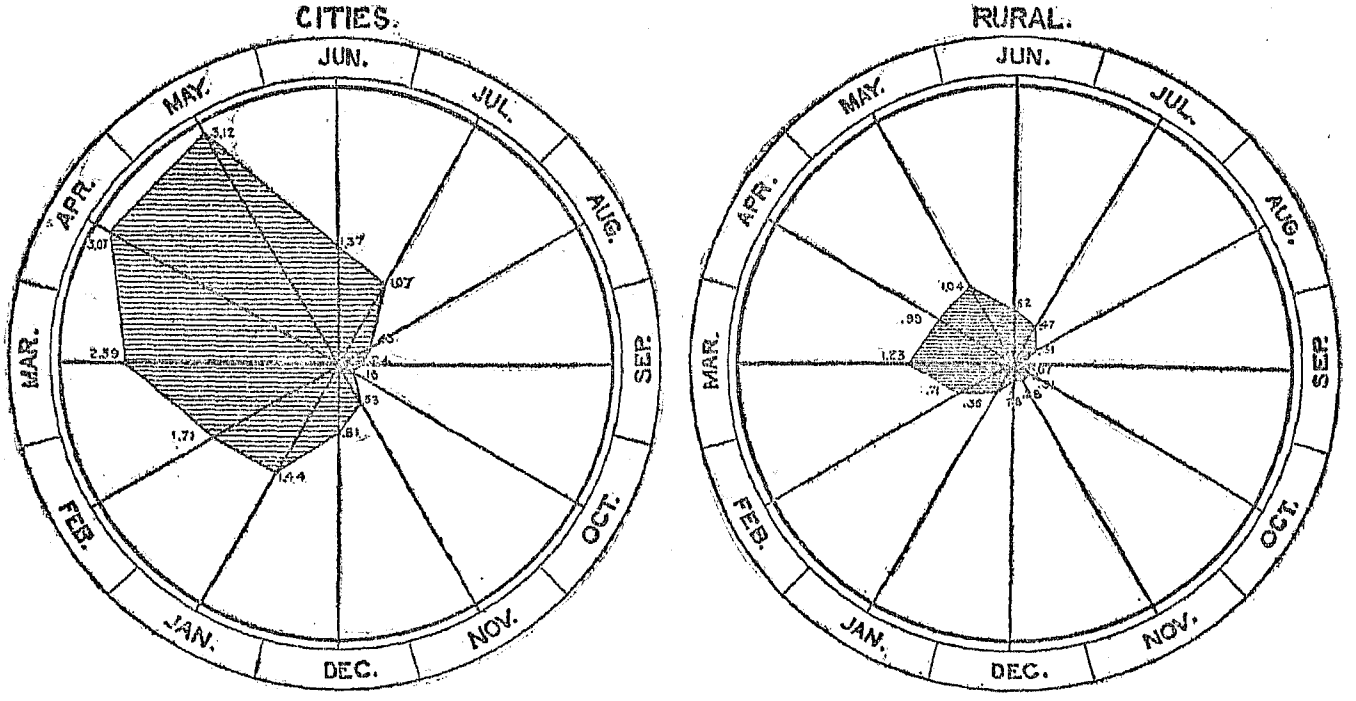


This table and diagram indicate that the greatest proportion of deaths from measles occurred in the months of February, March, April, and May, but it must be remembered that the data for the earlier months in the census year are much more incomplete than those for the later months.

The following table shows, for the sum of Grand Groups 1, 2, and 5, which were mainly registration areas, the number of deaths from measles in each month during the census year, and the death rates per 100,000 of population, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			RATE.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.
June	112	86	26	1.07	1.37	0.62
July	87	67	20	0.83	1.07	0.47
August	40	27	13	0.38	0.43	0.31
September	18	15	3	0.17	0.24	0.07
October	23	10	13	0.22	0.16	0.31
November	45	33	12	0.43	0.53	0.28
December	63	51	12	0.60	0.81	0.28
January	105	90	15	1.00	1.44	0.36
February	137	107	30	1.31	1.71	0.71
March	214	162	52	2.04	2.59	1.23
April	234	192	42	2.23	3.07	0.99
May	239	195	44	2.28	3.12	1.04

The death rates in each month, as given in the preceding table, and the relative magnitude of the rates in the cities and the rural districts, are shown in the following diagram:

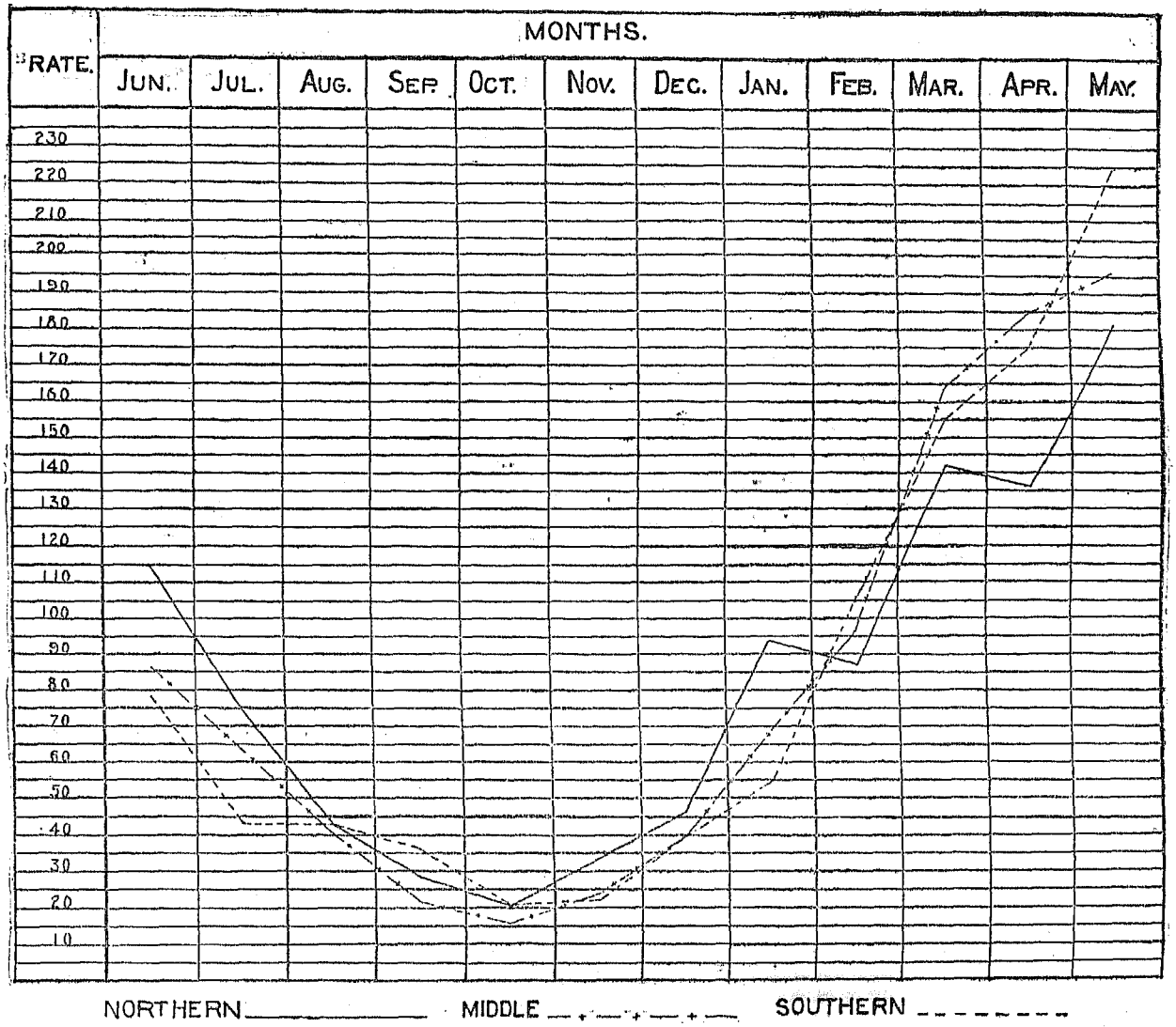


It will be seen from this table and diagram that the highest death rates from measles in this area occurred in the months from January to June, and that during these months the death rate from this disease was much higher in the cities than in the rural districts.

The following table shows, for three divisions of grand groups, namely, Northern, Middle, and Southern, the number of deaths reported as due to measles in children under 5 years of age in each month during the census year, and the proportion in each month per 1,000 of all deaths from this disease in children under 5 years of age:

MONTHS.	NORTHERN REGION. GRAND GROUPS 1, 5, 7, 13, 17, AND 19.		MIDDLE REGION. GRAND GROUPS 2, 6, 8, 10, 15, 16, 18, 20, AND 21.		SOUTHERN REGION. GRAND GROUPS 3, 4, 9, 11, 12, AND 14.	
	Deaths.	Proportion.	Deaths.	Proportion.	Deaths.	Proportion.
June	131	114.81	269	85.86	135	77.09
July	85	74.50	199	63.52	74	42.75
August	49	42.94	130	41.49	75	43.33
September	33	28.92	69	22.02	63	36.39
October	24	21.03	51	16.25	37	21.37
November	38	33.30	75	23.94	38	21.95
December	53	46.45	124	39.58	70	40.44
January	106	92.90	213	67.99	96	55.46
February	99	86.77	302	96.39	183	105.72
March	162	141.98	511	163.10	269	155.40
April	155	135.85	575	183.53	303	175.04
May	266	180.54	615	196.30	388	224.15

The relative proportion of deaths in each month in the several divisions, as given in the preceding table, is shown graphically in the following diagram:



It will be seen from this table and diagram that the greatest proportion of deaths from measles in all the divisions occurred in May, and the least from August to December. In the middle and southern regions the lowest proportion occurred in October.

DIPHTHERIA AND CROUP.

The majority of cases of death attributed to croup are due to diphtheria of the upper air passages, and in the statement of death rates for purposes of comparison it is not desirable to separate the one from the other. The tables appended to this report, however, contain the data with regard to each separately, as reported by enumerators and by physicians (registration records), so that either or both can be used as the student may prefer.

The total number of deaths reported as due to diphtheria in the United States during the census year was 27,815, of which 13,514 were of males and 14,301 of females. In the registration area the number of deaths reported as due to this disease was, males, 6,781; females, 7,005; total, 13,886; giving a death rate of 70.12 per 100,000 of population.

The total number of deaths reported as due to croup in the United States during the census year was 13,862, of which 7,519 were of males and 6,343 were of females. In the registration area the number of deaths reported as due to this disease was, males, 2,926; females, 2,506; total, 5,432; giving a death rate of 27.63, or for the two causes combined a death rate of 97.75 per 100,000 of population.

In 1890 the corresponding death rate from diphtheria and croup was, in England and Wales, 28.8; in Ireland, 21.3; in Scotland, 44.0; in Belgium, 56.5; in Prussia, 145.4; in Austria, 120.0, and in Italy, 50.0.

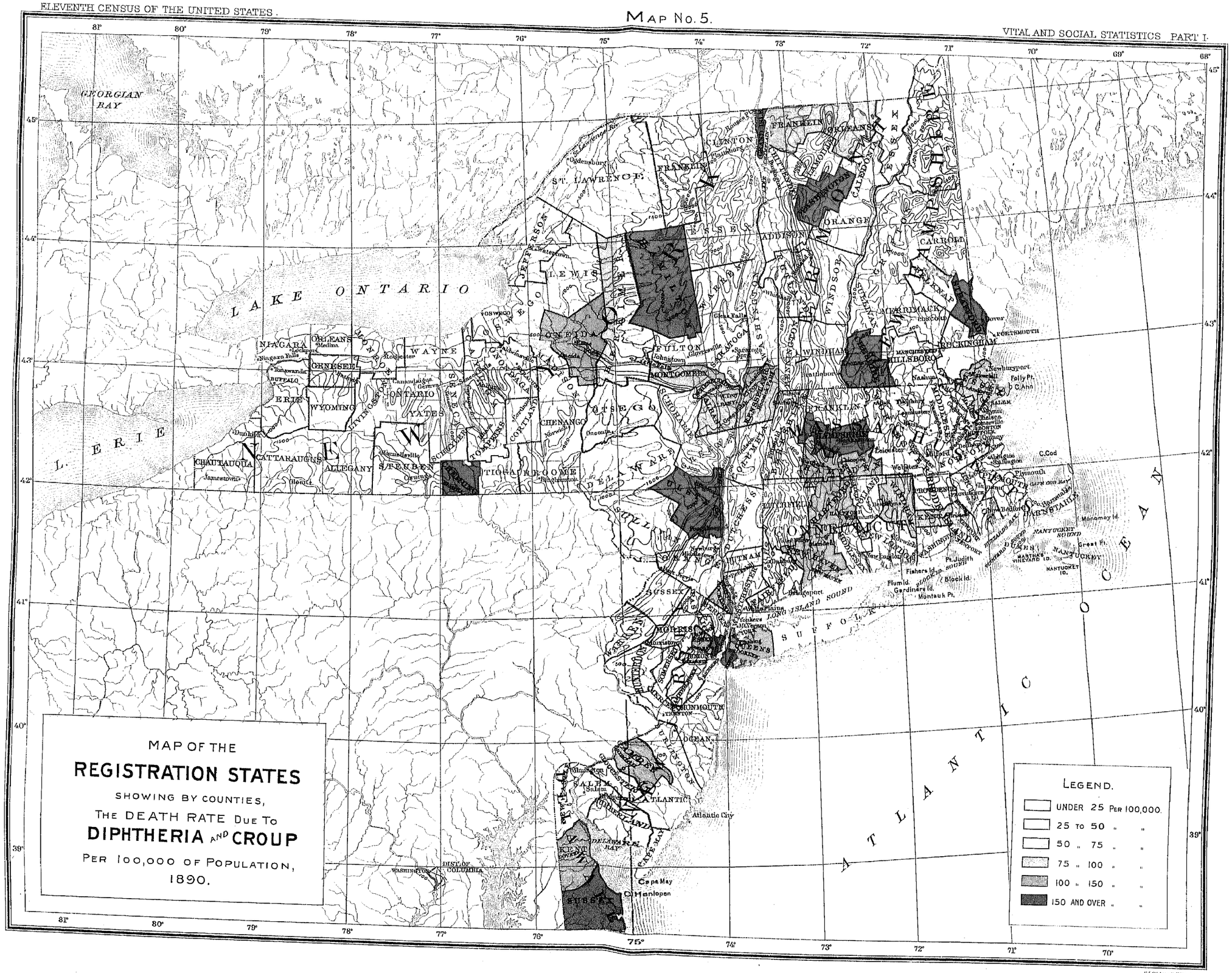
During the 10 years, 1880 to 1889, the death rates from diphtheria and croup, per 100,000 of population, were, in England and Wales, 29.5; in Ireland, 22.6; in Scotland, 42.5; in Sweden, 72.6; in Prussia, 163.2; in Austria, 165.1; in Saxony, 153.1; in Massachusetts, 92.2; in Connecticut, 79.4; in Rhode Island, 81.0, and in New Jersey, 97.6.

The following table shows, for the registration area and for some of its subdivisions, the death rates from diphtheria, from croup, and from diphtheria and croup combined, during the census year, per 100,000 of population, with distinction of color, sex, general nativity, and parental nativity:

AREA.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
Registration area	97.75	100.35	101.73	98.98	130.07	89.37	193.04	18.57	46.91	45.54	48.24
Diphtheria	70.12	72.16	71.29	73.02	93.30	68.05	137.00	13.74	30.26	27.24	33.19
Croup	27.63	28.19	30.43	25.96	36.68	21.33	56.03	4.83	16.65	18.30	15.05
Registration cities	111.21	115.18	117.37	113.01	156.82	123.97	215.99	19.32	47.21	45.63	48.71
Diphtheria	79.23	82.27	81.53	83.00	111.77	93.83	153.17	14.37	30.25	27.38	33.60
Croup	31.98	32.91	35.84	30.01	45.05	30.13	62.81	4.95	16.96	18.25	15.71
Registration states	95.44	96.03	99.19	92.94	122.45	85.67	183.43	19.67	70.19	69.56	70.79
Diphtheria	70.14	70.62	71.23	69.96	90.08	65.88	130.78	14.41	49.25	44.61	53.63
Croup	25.30	25.40	27.90	22.90	32.37	19.79	52.65	5.26	20.95	24.95	17.16
Registration cities in registration states	121.65	123.04	129.55	116.84	171.74	131.45	212.79	21.42	81.60	81.37	81.80
Diphtheria	89.12	89.98	92.28	87.79	125.52	100.78	151.67	15.81	57.38	53.50	60.85
Croup	32.83	33.06	37.26	29.05	46.21	30.66	61.12	5.61	24.22	27.87	20.05
Rural part of registration states	54.94	55.14	54.67	55.62	62.71	50.70	104.05	14.17	43.82	44.66	42.92
Diphtheria	41.14	41.33	40.50	42.17	47.11	39.22	74.31	10.00	30.43	25.86	35.35
Croup	13.81	13.81	14.17	13.45	15.59	11.48	29.75	4.17	13.39	18.81	7.57
Cities in nonregistration states	101.30	107.42	105.79	109.09	142.98	107.81	223.34	16.91	37.04	36.14	39.11
Diphtheria	70.11	74.67	71.31	78.11	99.01	78.82	156.03	12.74	22.70	20.44	24.91
Croup	31.19	32.75	34.48	30.98	43.98	28.99	66.71	4.20	14.04	15.70	14.19
Cities of 100,000 population and over	110.55	119.76	.....	.....	169.94	155.74	226.05	17.92	53.18	.....	.....
Diphtheria	83.49	85.71	.....	.....	121.31	120.22	162.55	13.46	39.73	.....	.....
Croup	33.06	34.05	.....	.....	48.63	35.52	63.51	4.46	13.46	.....	.....
Metropolitan district, 6 years	165.58	167.53	172.65	162.52	254.10	227.49	271.40	22.32	56.73	57.53	55.96
Diphtheria	112.89	114.18	114.80	113.58	173.01	160.99	180.83	15.50	40.88	38.79	42.99
Croup	52.69	53.35	57.85	48.95	81.09	66.49	90.58	6.82	15.85	18.75	13.06

It will be seen from this table that the death rate from diphtheria and croup was more than twice as high among the whites (100.35) as among the colored (46.91), the difference being greater for the cases reported under the head of diphtheria (white, 72.16; colored, 30.26) than for those reported under the head of croup (white, 28.19; colored, 16.65). The death rate from diphtheria and croup in the whites was slightly higher among males (101.73) than among females (98.98), but for diphtheria alone there was a slight excess of death rate for females (73.02; males, 71.29). Among the colored the death rate from diphtheria and croup was slightly higher among the females (48.24) than among the males (45.54), this excess occurring entirely in the cases reported as due to diphtheria (females, 33.19; males, 27.24).

The death rate among the native born whites (130.07) was much higher than among the foreign born whites (18.57), owing mainly to the much larger proportion of young children in the former class. Among the native born whites having one or both parents foreign born the death rate from these causes (193.04) was much higher than among those of whom both parents were native (89.37).



MAP OF THE

REGISTRATION STATES

SHOWING BY COUNTIES,

THE DEATH RATE DUE TO

DIPHTHERIA AND CROUP

PER 100,000 OF POPULATION,

1890.

LEGEND.

- UNDER 25 PER 100,000.
- 25 TO 50 " "
- 50 " 75 " "
- 75 " 100 " "
- 100 " 150 " "
- 150 AND OVER " "

In the registration states the death rates from diphtheria and croup were more than twice as high in the cities (121.95) as in the rural districts (54.94), and this applies also to the diseases taken separately (diphtheria in the cities, 89.12; in the rural districts, 41.14; croup in the cities, 32.83; in the rural districts, 13.81); and for each of these diseases the death rate was highest of all in the metropolitan district for the 6-year period, being for diphtheria and croup taken together 165.58; and for these diseases among the native children having one or both parents foreign born, 271.40.

The following table shows, for each of the registration states and for their sum, the death rates from diphtheria and croup during the census year, per 100,000 of population, with distinction of sex, and the cities and rural districts:

REGISTRATION STATES.	AGGREGATE.			MALES.			FEMALES.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.	Total.	Cities.	Rural.
Total	95.44	121.95	54.94	98.52	128.31	54.50	92.42	115.88	55.40
Connecticut	96.08	127.60	73.64	96.07	131.34	71.34	96.09	124.01	75.92
Delaware	96.74	66.74	113.95	100.50	77.80	113.22	92.86	55.52	114.72
District of Columbia	83.34	83.34	.....	83.95	83.95	.....	82.78	82.78	.....
Massachusetts	98.80	110.97	58.95	102.23	114.90	61.74	95.55	107.31	56.23
New Hampshire	86.58	142.98	63.15	88.44	143.89	66.94	84.75	142.17	59.28
New Jersey	104.92	144.84	52.71	101.83	141.39	51.02	107.99	148.22	54.42
New York	94.25	126.68	41.83	99.84	136.03	42.35	88.75	117.12	41.30
Rhode Island	81.91	85.97	76.32	80.94	93.87	63.76	82.83	78.70	88.69
Vermont	83.33	49.48	86.48	79.73	66.44	80.88	87.07	33.90	92.35

It will be seen from this table that the death rate from these diseases was highest in New Jersey (104.92) and in Massachusetts (98.80), and was lowest in Rhode Island (81.91). In the rural districts it was highest in Delaware (113.95), and lowest in New York (41.83). It was generally higher among males than among females, but in the rural districts it was slightly higher among females than among males. It was higher among the white than among the colored in the aggregate, but was much higher among the colored than the white in certain limited localities, the very small number of deaths among the colored making the death rates derived therefrom of little scientific value.

The following table shows for each of the registration states, and for their sum, the death rates from croup during the census year, per 100,000 of population, with distinctions of sex, and of cities and rural districts:

REGISTRATION STATES.	AGGREGATE.			MALES.			FEMALES.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.	Total.	Cities.	Rural.
Total	25.30	32.83	13.80	27.83	37.02	14.26	22.82	28.83	13.35
Connecticut	19.10	22.56	16.75	23.00	28.80	18.87	15.40	16.45	14.63
Delaware	47.48	53.72	43.90	51.42	68.15	42.00	43.42	39.19	45.89
District of Columbia	20.40	20.40	.....	24.04	24.04	.....	16.56	16.56	.....
Massachusetts	21.89	23.07	15.07	23.08	24.80	17.36	20.76	23.13	12.83
New Hampshire	25.50	38.01	19.02	24.12	34.53	20.08	26.85	42.82	19.76
New Jersey	31.07	43.84	14.87	32.32	45.40	15.53	29.83	42.32	13.20
New York	26.14	36.65	9.16	29.03	42.64	9.30	22.71	30.89	9.02
Rhode Island	23.15	16.99	31.63	24.40	21.90	27.72	21.97	12.48	35.48
Vermont	15.04	7.07	16.77	15.95	14.76	16.05	15.94	.....	17.53

The comparative death rates due to diphtheria and croup combined, in the different counties of the registration states, per 100,000 of population, are shown in map No. 5.

Of 14,723 deaths from diphtheria and croup among whites in the registration area during the census year, 6,241 were of children of mothers born in the United States, 2,325 of children of mothers born in Germany, 1,940 of children of mothers born in Ireland, 753 of children of mothers born in Canada, 564 of children of mothers born in Scandinavia, 208 of children of mothers born in Italy, 135 of children of mothers born in Scotland, 90 of children of mothers born in Bohemia, 50 of children of mothers born in France, and 45 of children of mothers born in Hungary.

The following table shows, for the registration area and some of its subdivisions, the death rates of the whites from diphtheria, from croup, and from diphtheria and croup combined, during the census year, per 100,000 of population, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
Registration area	89.99	80.76	72.93	66.23	60.99	109.39	111.92	124.70	140.61	221.08	148.51	124.42
Diphtheria	68.39	59.14	56.24	54.95	47.57	78.81	72.53	92.70	81.24	147.39	82.11	67.53
Croup	21.60	21.62	16.69	11.28	13.42	30.58	39.39	32.00	59.37	73.69	66.40	56.89
Registration cities	128.32	89.49	81.89	72.69	53.71	117.48	131.32	138.97	157.66	226.68	160.90	135.72
Diphtheria	97.40	65.61	63.24	59.18	39.90	84.53	88.75	102.78	89.58	152.82	87.54	73.32
Croup	30.92	23.88	18.65	13.51	13.81	32.95	42.57	36.19	68.08	73.86	73.36	62.40
Registration states	88.12	83.05	76.90	69.32	67.72	101.60	113.34	104.09	146.82	167.17	160.74	102.45
Diphtheria	67.01	61.31	59.65	57.87	53.83	72.16	71.44	73.19	87.30	96.44	89.39	55.68
Croup	21.11	21.74	17.25	11.45	13.89	29.44	41.90	30.90	59.52	70.73	71.35	46.77
Registration cities in registration states	141.83	96.07	88.04	79.12	58.85	113.45	137.51	129.61	170.57	177.23	177.75	114.82
Diphtheria	107.70	71.19	69.15	64.66	44.14	86.27	90.22	89.11	99.50	106.34	97.22	61.91
Croup	34.13	24.88	19.79	14.46	14.71	33.18	47.29	40.50	71.07	70.89	80.53	52.91
Rural part of registration states	43.70	56.22	39.21	45.48	89.18	50.38	74.86	43.77	24.41	69.11	74.61	33.49
Diphtheria	33.36	40.94	29.90	41.35	77.29	37.10	41.54	35.56	24.41	.....	49.74	20.93
Croup	10.34	15.28	9.31	4.13	11.89	13.28	33.32	8.21	.....	69.11	24.87	12.56
Registration cities in nonregistration states	98.94	71.38	47.01	52.74	45.10	123.32	100.39	145.68	117.58	254.41	66.22	182.86
Diphtheria	75.00	50.26	33.93	42.10	32.80	90.69	81.40	112.57	58.79	178.88	33.11	99.05
Croup	23.94	21.12	13.03	10.55	12.30	32.63	18.99	33.11	58.79	75.53	33.11	83.81
Cities of 100,000 population and over	166.72	84.65	89.24	84.21	60.48	117.05	168.46	134.04	143.11	237.05	166.41	151.41
Diphtheria	127.44	63.66	69.95	71.10	47.01	83.73	141.68	102.20	81.78	160.76	91.67	81.58
Croup	39.27	20.99	19.29	13.05	13.44	33.32	26.78	31.84	61.33	76.29	74.73	69.83

It will be seen from this table that in the registration area, among the whites, the death rate from diphtheria and croup combined was highest among the children of mothers born in Bohemia (221.08), in Italy (148.51), and in Hungary (140.61), and was lowest among the children of mothers born in France (60.99), in Scotland (66.23), and in Ireland (72.93). It was above the average among the children of mothers born in Canada (111.92) and in Germany (109.39), and below it among the children of mothers born in England and Wales (80.76), and in the United States (89.99). Among the children of mothers born in the United States it was more than three times as high in the cities of the registration states (141.83) as in the rural districts of the same states (43.70), and was highest of all in the cities of 100,000 population and upward (166.72).

The following table shows, for the registration area and some of its subdivisions, the death rates from diphtheria and croup during the census year, in each of the four age groups, per 100,000 population of corresponding ages, with distinction of sex:

AREAS.	UNDER 1 YEAR.			UNDER 5 YEARS.			5 TO 15 YEARS.			15 YEARS AND OVER.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
Registration area	337.40	384.19	289.35	607.26	632.83	581.17	166.48	156.44	176.59	5.79	5.18	6.40
Cities	362.20	407.56	315.86	693.62	724.10	662.59	180.49	169.38	191.55	5.09	4.55	5.62
States	344.05	404.79	281.65	613.67	649.73	576.99	165.70	156.37	175.15	6.58	5.89	7.24
Cities	400.94	466.03	334.31	803.68	857.24	749.55	195.27	184.12	206.37	5.66	5.07	6.21
Rural	238.02	291.21	183.03	287.78	296.93	278.36	121.55	115.80	127.53	7.97	7.08	8.86
Cities in nonregistration states	328.48	356.50	299.69	598.50	609.80	586.92	167.63	156.54	178.66	4.56	4.08	5.04
Cities of 100,000 population and upward	357.09	412.68	300.12	731.57	767.02	695.47	175.01	163.19	186.79	4.66	4.12	5.19
Metropolitan district	440.57	509.45	369.74	915.66	986.39	844.35	180.73	169.19	192.33	4.73	3.88	5.53

It will be seen from the preceding table that the greatest mortality from these diseases occurred in children under 5 years of age (607.26); that for the age group from 5 to 15 being 166.48; and that for the age group 15 years of age and over only 5.79.

In the age group under 5 years in the registration states the death rate from these diseases was much higher in the cities (803.68) than in the rural districts (287.78), and was highest of all among males in the metropolitan district (986.39). In the age group from 5 to 15 years of age the death rate from these diseases was higher among females (176.59) than among males (156.44), and this excess is found both in the cities and in the rural districts, and also occurs in the age group 15 years of age and over.

The following table shows, for the registration area and some of its subdivisions, the death rates from diphtheria and from croup separately, during the census year, in each of two age groups, per 100,000 population of corresponding ages, with distinction of sex:

AREAS.	UNDER 5 YEARS.						5 TO 15 YEARS.					
	Diphtheria.			Croup.			Diphtheria.			Croup.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
Registration area	391.47	400.41	382.34	215.80	232.42	198.83	139.40	128.31	150.55	27.09	28.13	26.04
Cities	449.80	461.20	438.19	243.82	262.90	224.40	150.16	137.08	163.18	30.33	32.30	28.38
States	405.40	421.73	388.78	208.27	227.09	188.20	141.34	131.50	151.31	24.36	24.86	23.84
Cities	539.34	565.87	512.53	264.34	291.37	237.02	165.76	152.52	178.96	29.50	31.59	27.42
Rural	175.67	176.68	174.63	112.11	120.25	103.73	104.88	100.77	109.15	16.67	15.63	18.38
Cities in nonregistration states	372.41	371.34	373.49	226.09	238.45	213.43	136.57	123.63	149.46	31.06	32.91	29.21
Cities of 100,000 population and over	484.51	498.44	470.32	247.07	268.58	225.16	145.62	133.12	158.10	29.38	30.68	28.70
Metropolitan district	640.69	676.40	604.68	274.97	303.99	239.66	151.86	139.13	164.67	28.87	30.66	27.66

It will be seen from this table that in children under 5 years of age the death rates from both diphtheria and croup were higher in males than in females, while in the age group from 5 to 15 the death rate from diphtheria was higher in females (150.55) than in males (128.31), and for croup the death rate was slightly higher for males (28.13) than for females (26.04).

In the registration states the death rate from diphtheria in the cities (539.34) was more than three times as high as it was in the rural districts (175.67), while for croup the proportion of difference was less (cities, 264.34; rural districts, 112.11).

The combined relations of age and race to the death rates from diphtheria and croup are indicated in the following table, showing the number of deaths in each of three age groups, and the death rates per 100,000 population of corresponding ages, with distinction of color and, for the whites, of birthplaces of mothers, the data being derived from a combination of the returns from Boston, Brooklyn, Cincinnati, New York city, the District of Columbia, and the state of New Jersey, for the census year:

COLOR AND BIRTHPLACES OF MOTHERS.	UNDER 1 YEAR.		UNDER 5 YEARS.		5 TO 15 YEARS.	
	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.
White	409	390.58	4,188	863.59	1,591	184.34
Colored	13	362.62	62	895.38	64	197.48
Birthplaces of mothers (white):						
United States	160	303.94	1,869	756.64	782	191.33
England and Wales	13	357.34	142	832.01	64	184.57
Ireland	63	441.63	710	1,075.35	294	195.12
Scotland	3	261.78	39	717.44	16	150.11
France			11	550.83	9	295.29
Germany	69	412.43	784	977.26	363	183.21
Canada	6	364.30	77	1,036.48	38	282.97
Scandinavia	7	447.57	57	858.69	22	285.34
Hungary	6	721.15	33	1,015.07	2	52.37
Bohemia	3	656.46	21	1,066.53	3	101.39
Italy	22	595.24	143	951.11	13	77.33

The preceding table indicates that for children under 5 years of age the death rate due to diphtheria and croup per 100,000 of population was much higher among the whites (863.59) than among the colored (395.38), but that in the age group from 5 to 15 the death rate for the colored from these diseases (197.48) was slightly in excess of that for the whites (184.34). Among white children under 5 years of age the death rate from these diseases was highest among the children of mothers born in Ireland (1,075.35), in Bohemia (1,066.53), and in Canada (1,636.48), and was lowest among the children of mothers born in France (550.83), in Scotland (717.44), and in the United States (756.64). For further details with regard to death rates from these diseases in large cities, see Part II of this report, page 87.

Out of each 100,000 deaths from all causes, excluding stillbirths, in the United States during the census year, 3,446 were reported as due to diphtheria and 1,717 as due to croup, giving a total of 5,164, the corresponding figure in 1880 having been 7,413, and in 1870, 3,452.

In England and Wales the corresponding proportion in 1890 was 1,475, and in 1880, 532. In 1890, it was, in Prussia, 6,060; in Austria, 4,080; in Belgium, 2,710; in Scotland, 2,230; in Italy, 1,880; and in Ireland, 1,140.

The number of deaths due to diphtheria and croup in children under 15 years of age per 1,000 of all deaths from known causes occurring under 15 years of age in the United States was, for the whites, 124.44; for the colored, 43.42; for the Chinese, 30.77; and for the Indians, 122.93. In the registration area the corresponding figure was 104.94.

The following table shows, for the United States and for the registration area and some of its subdivisions, the proportion of deaths from diphtheria and croup, during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of color, sex, general nativity, and parental nativity:

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
The United States	51.64	56.04	53.32	59.13	67.20	54.63	99.27	11.56	21.14	20.70	21.60
Registration area	50.39	53.04	50.83	55.51	69.11	52.40	90.75	9.68	16.29	15.62	17.66
Cities	53.55	57.01	54.40	59.96	76.81	65.87	93.13	9.80	15.80	14.45	17.26
States	49.55	50.34	49.51	51.24	64.89	49.02	84.60	10.00	25.88	24.35	27.51
Cities	55.39	56.53	55.73	57.42	77.26	66.11	86.54	10.30	26.06	24.10	28.09
Rural	36.51	36.75	35.69	37.87	42.37	33.61	75.29	8.79	25.17	25.33	25.00
Cities in nonregistration states	51.64	57.55	52.94	63.00	76.32	65.25	111.82	9.16	12.77	11.65	13.98
Cities of 100,000 population and upward	54.15	56.88	.....	.....	78.89	71.72	94.49	8.03	17.33	.....	.....
Metropolitan district, 6 years	66.41	67.29	64.72	70.19	94.69	83.52	102.13	10.31	21.03	19.72	22.50

This table indicates that the proportion of deaths from diphtheria and croup to the total deaths from known causes was nearly the same in the United States as a whole (51.64) as it was in the registration area (50.39), and that in both areas it was much greater among the whites than among the colored; greater among females than among males, and greater among native born white children having one or both parents foreign born than among native born white children of whom both parents were native born.

The following table shows, for the United States and for the registration area and some of its subdivisions, the proportion of deaths from diphtheria and croup among the whites, during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
The United States	66.63	47.11	34.29	41.84	33.89	63.81	71.79	95.04	62.01	124.05	55.39	75.34
Registration area	65.96	49.09	34.65	40.98	37.51	64.22	69.46	79.96	62.94	82.19	58.51	63.80
Cities	82.25	51.58	35.81	42.74	31.65	66.50	71.98	86.05	65.67	82.48	57.36	65.93
States	61.65	49.26	35.43	40.65	40.12	56.71	69.12	60.87	65.72	55.67	60.48	59.41
Cities	77.70	52.56	36.91	42.68	32.21	59.12	71.85	67.96	69.50	55.43	59.32	62.39
Rural	38.75	40.34	27.60	33.85	66.68	40.62	62.19	35.16	22.22	62.50	78.95	31.07
Cities in nonregistration states	100.59	48.22	28.01	43.01	30.47	79.76	72.83	103.59	52.63	101.91	38.22	71.69
Cities of 100,000 population and upward	88.45	47.20	34.70	44.49	33.13	62.88	80.41	76.79	62.39	82.54	56.74	60.72

The preceding table indicates that in the United States as a whole, as well as in the registration area, the greatest proportion of deaths from diphtheria and croup among the whites occurred in the children of mothers born in Bohemia, and the least in the children of mothers born in France and in Ireland. It should be borne in mind, however, that, as is shown above, the highest death rate from these causes in children under 5 years of age occurred in the children of mothers born in Ireland.

The following table shows the proportion of deaths from diphtheria and croup, at certain ages and groups of ages, per 1,000 deaths at all ages from these causes, in 1880 and in 1890, with distinction of sex:

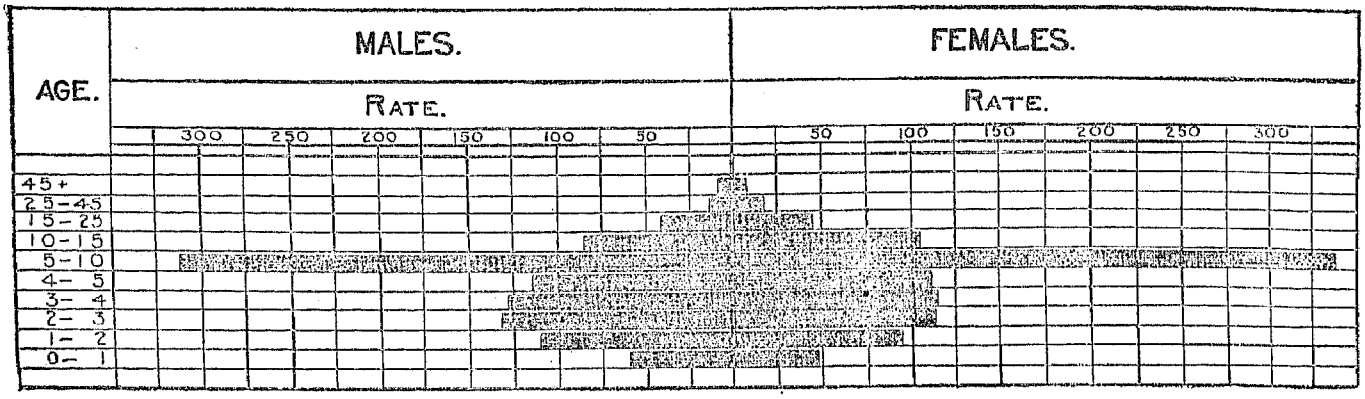
AGES.	1880		1890		AGES.	1880		1890	
	Males.	Females.	Males.	Females.		Males.	Females.	Males.	Females.
Total under 5 years..	602.92	601.09	649.40	583.96	35 to 40 years.....	1.62	2.72	2.10	2.82
Under 1 year.....	185.19	151.22	148.44	120.79	40 to 45 years.....	1.09	1.59	1.96	1.41
1 year.....	130.73	118.40	135.31	120.01	45 to 50 years.....	1.02	1.12	0.95	1.31
2 years.....	135.41	125.97	139.94	129.05	50 to 55 years.....	0.81	0.98	0.86	1.31
3 years.....	113.79	109.23	123.52	116.22	55 to 60 years.....	0.77	0.94	1.00	0.58
4 years.....	97.81	97.17	102.18	102.89	60 to 65 years.....	0.53	0.72	0.72	1.51
5 to 10 years.....	235.40	261.65	248.42	280.67	65 to 70 years.....	0.49	0.43	0.67	0.63
10 to 15 years.....	65.59	91.59	58.16	76.10	70 to 75 years.....	0.63	0.58	0.81	0.58
15 to 20 years.....	15.88	20.90	19.19	23.40	75 to 80 years.....	0.35	0.25	0.07	0.88
20 to 25 years.....	6.80	7.03	8.98	9.02	80 to 85 years.....	0.14	0.33	0.33	0.39
25 to 30 years.....	3.42	4.13	3.01	5.15	85 to 90 years.....	0.07	0.11	0.24	0.24
30 to 35 years.....	2.36	2.79	2.44	3.09	90 to 95 years.....	0.11	0.07	0.10	.....
					95 years and over.....	.....	0.07	.....	0.05

It appears from this table that in the census of 1890 about 60 per cent of the deaths from diphtheria and croup occurred in children under 5 years of age, and that about 95 per cent occurred in children under 15 years of age.

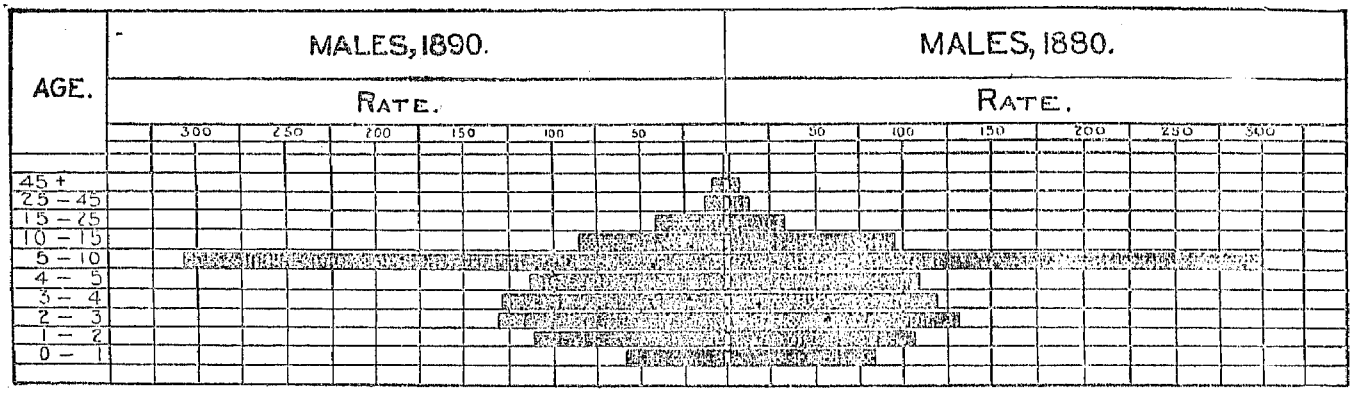
The following table indicates the differences in the proportions of deaths at each of certain ages or groups of ages per 1,000 of all deaths reported as due to diphtheria and to croup, during the census years 1880 and 1890, with distinction of sex:

AGES.	1889				1890			
	Diphtheria.		Croup.		Diphtheria.		Croup.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Total under 5 years.....	552.51	491.47	874.82	863.61	544.48	486.26	838.33	821.35
Under 1 year.....	83.33	65.40	380.68	354.40	59.56	49.36	308.50	282.40
1 year.....	108.23	96.03	173.90	171.28	110.50	94.52	179.99	177.69
2 years.....	132.65	114.25	140.70	153.71	132.04	114.57	154.19	161.83
3 years.....	119.10	110.49	103.60	106.20	128.69	116.67	114.20	115.18
4 years.....	109.20	105.28	75.95	77.96	113.69	111.13	81.44	84.25
5 to 10 years.....	300.06	322.13	111.31	118.46	309.37	337.75	138.67	151.51
10 to 15 years.....	95.38	126.31	8.43	9.39	84.43	104.75	10.83	11.26
15 to 20 years.....	23.62	28.81	1.93	2.20	23.44	31.90	2.54	4.44
20 to 25 years.....	9.96	9.69	0.72	0.73	12.48	13.46	2.67	1.90
25 to 30 years.....	4.93	5.46	0.51	0.98	4.03	6.80	1.07	1.43
30 to 35 years.....	3.43	3.81	0.31	0.37	3.27	5.05	0.94	1.59
35 to 40 years.....	2.20	3.66	0.51	0.49	2.90	3.65	0.67	0.95
40 to 45 years.....	1.39	2.01	0.51	0.61	2.67	1.96	0.67	0.16
45 to 50 years.....	1.20	1.39	0.51	0.49	1.41	1.75	0.13	0.32
50 to 55 years.....	1.07	1.20	0.31	0.24	1.19	1.61	0.27	0.63
55 to 60 years.....	1.07	1.19	0.21	0.37	1.34	0.77	0.40	0.16
60 to 65 years.....	0.75	0.83	0.10	0.49	0.74	1.75	0.67	0.95
65 to 70 years.....	0.75	0.52	.....	0.24	0.82	0.63	0.40	0.63
70 to 75 years.....	0.80	0.46	0.31	0.85	0.97	0.56	0.53	0.63
75 to 80 years.....	0.43	0.26	0.21	0.24	0.74	0.63	0.53	1.43
80 to 85 years.....	0.21	0.36	.....	0.24	0.30	0.28	0.40	0.63
85 to 90 years.....	0.05	0.15	0.10	.....	0.22	0.35	0.27	.....
90 to 95 years.....	0.11	0.10	0.10	.....	0.15	.....	.....	.....
95 years and over.....	.....	0.10	.....	.....	.....	0.07	.....	.....

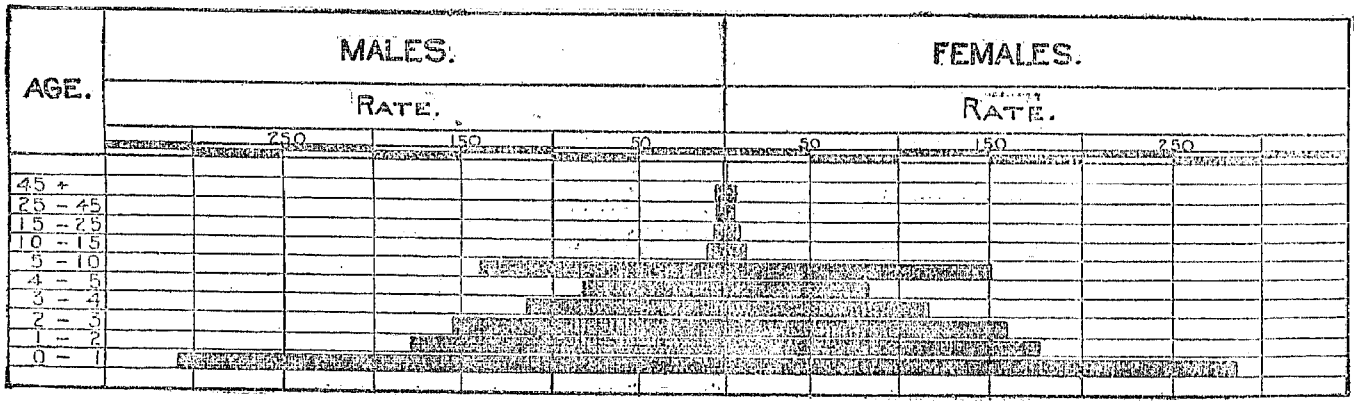
The comparative proportions of deaths of males and females, in each age group, from diphtheria, in the United States, during the census year, are shown graphically in the following diagram:



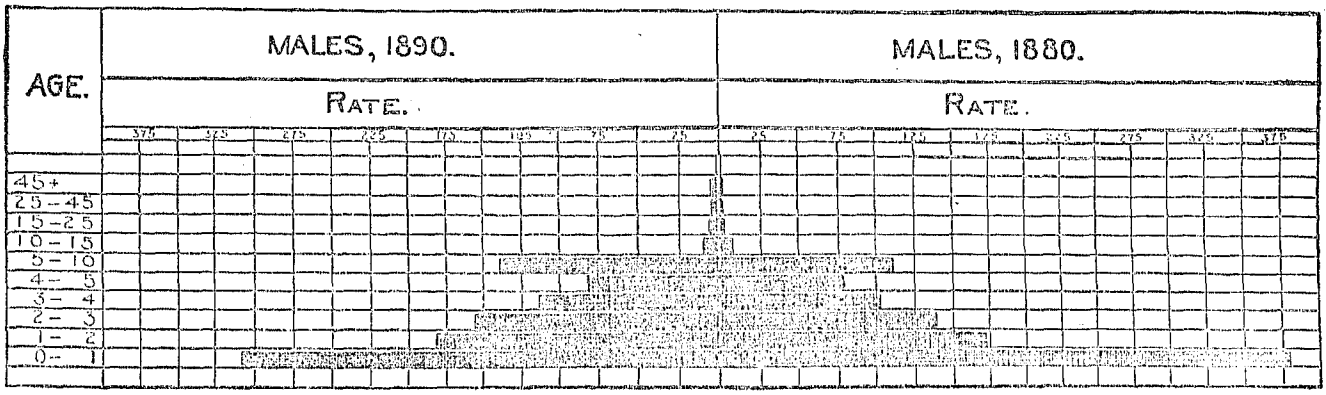
The comparative proportions of deaths of males in each age group from diphtheria, in 1880 and 1890, are shown in the following diagram:



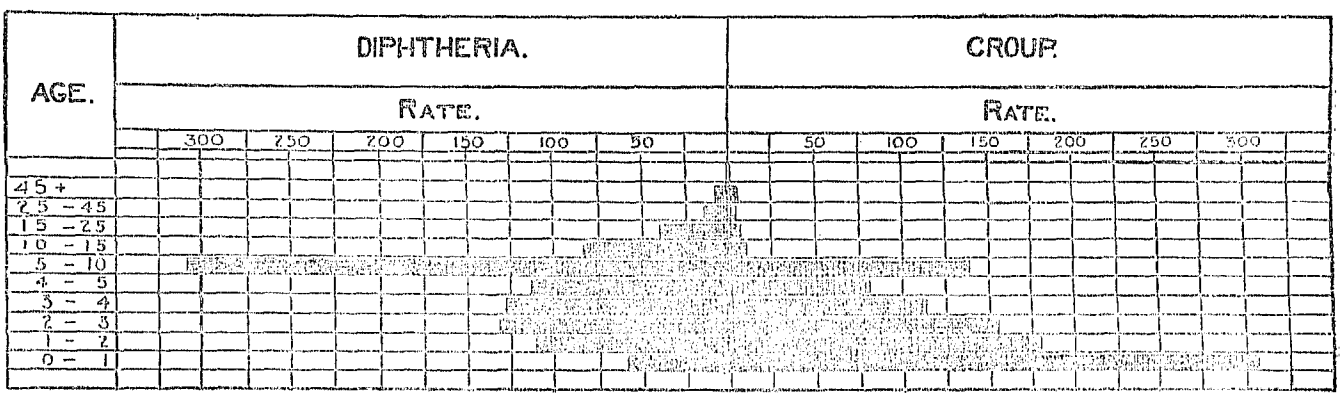
The comparative proportions of deaths of males and females in each age group from croup, in the United States, during the census year, are shown in the following diagram:



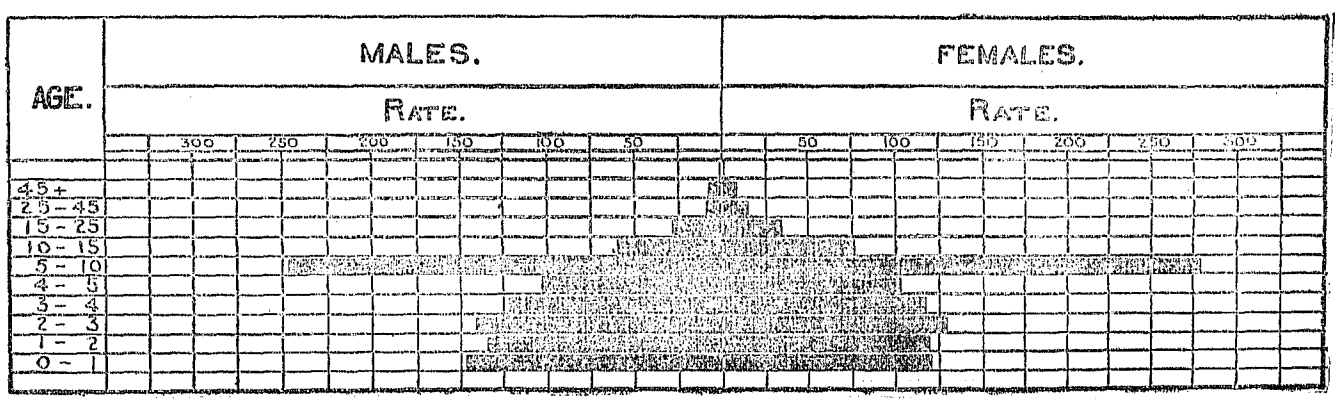
The comparative proportions of deaths of males in each group from croup, in 1880 and 1890, are shown in the following diagram:



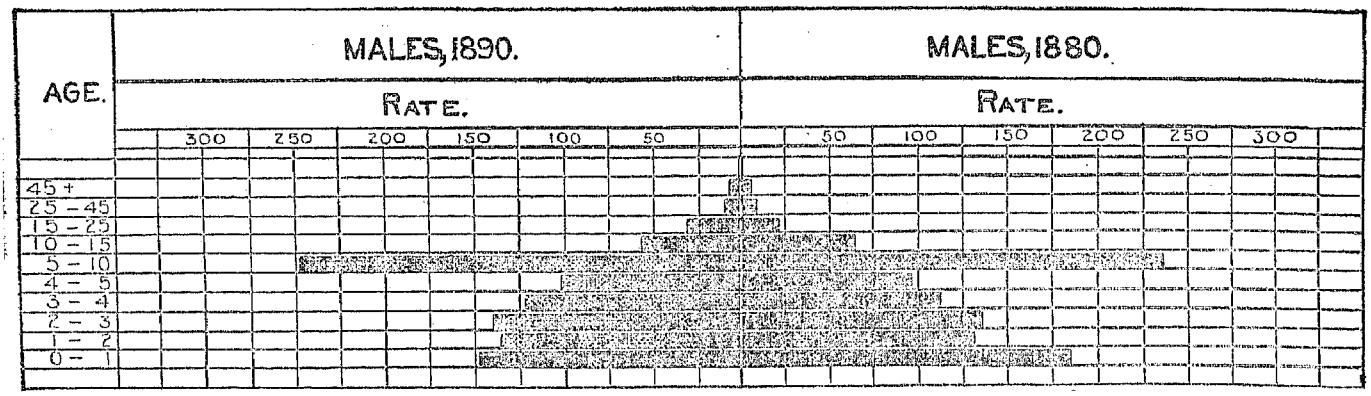
The comparative proportions of deaths of males in each age group from diphtheria and from croup, in the United States, during the census year, are shown in the following diagram:



The comparative proportions of deaths of males and females in each age group from diphtheria and croup combined, in the United States, during the census year, are shown in the following diagram:



The comparative proportions of deaths of males in each age group from diphtheria and croup combined, in 1880 and 1890, are shown in the following diagram:



The preceding tables and diagrams indicate that about one-half of the deaths reported as due to diphtheria occurred in children under 5 years of age, and that over one-half of the remaining deaths occurred in those from 5 to 10 years of age. A greater proportion of males than of females died under 5 years of age from this disease.

Of those reported as dying from croup, a much greater proportion were reported as being under 5 years of age, the average being about 87 per cent in 1880, and 83 per cent in 1890.

This indicates that fatal cases of this disease were more frequently called croup when they occurred in infants, and diphtheria when they occurred in children 5 years of age and over. Now that the diagnosis of diphtheria is made mainly on the presence of the specific bacillus, it is probable that fatal cases of croup will be much more rarely reported in future.

The average age at death of those dying in the United States in 1890 from diphtheria was 6.87 years; from croup, 3.34 years; from both diseases taken together, 5.81 years. In 1880, the average age at death of those reported as dying from diphtheria was 6 years; and from croup, 2 years.

The following table shows, for each grand group, the proportion of deaths from diphtheria during the census year, per 1,000 deaths from known causes, with distinction of sex and color, of rural districts and cities, and of children of mothers born in Ireland and in Germany:

GRAND GROUPS.	Total.	RURAL.		CITIES.		White.	Colored.	MOTHERS BORN IN—	
		Males.	Females.	Males.	Females.			Ireland.	Germany.
1. North Atlantic Coast region	36.00	24.71	23.97	41.21	42.83	36.17	26.06	32.52	68.20
2. Middle Atlantic Coast region	33.06	24.20	30.47	32.76	36.34	35.26	12.80	25.09	37.76
3. South Atlantic Coast region	7.96	7.26	13.52	1.08	2.25	13.06	4.72	.....	.....
4. Gulf Coast region	10.27	5.93	7.76	11.37	17.50	12.85	6.42	10.99	15.63
5. Northeastern hills and plateaus	35.39	29.91	33.98	41.75	42.75	35.40	34.09	27.58	47.62
6. Central Appalachian region	43.08	45.82	54.87	34.64	47.24	43.84	14.55	30.86	53.77
7. Region of the Great Northern Lakes	46.05	41.34	51.16	39.98	53.39	46.49	11.20	19.20	52.51
8. Interior plateau	29.51	27.50	29.47	28.27	32.97	32.26	9.53	23.66	42.94
9. Southern Central Applachian region	20.34	19.20	25.60	3.12	4.71	24.89	4.57	.....	5.08
10. Ohio River belt	35.79	28.67	30.38	43.48	52.15	37.74	14.56	23.33	43.39
11. Southern Interior plateau	8.49	7.87	9.34	4.65	5.46	12.78	5.09	.....	.....
12. South Mississippi River belt	7.14	5.51	6.57	12.26	17.49	6.76	7.39	.....	.....
13. North Mississippi River belt	45.98	51.09	54.02	34.31	44.37	47.91	13.16	33.00	56.87
14. Southwest Central region	7.04	5.88	8.61	3.60	7.60	7.64	4.45	5.83	7.23
15. Central region, plains and prairies	19.55	17.28	20.63	25.60	22.87	21.03	8.15	7.92	19.54
16. Prairie region	52.78	45.56	60.34	59.34	63.21	53.77	4.58	36.27	69.51
17. Missouri River belt	52.51	46.25	62.91	42.72	57.31	50.01	3.39	38.02	67.68
18. Region of the Western plains	81.62	77.84	106.76	49.87	66.10	84.71	25.84	32.79	50.31
19. Heavily timbered region of the Northwest	44.07	42.92	45.38	.....	.....	45.00	5.35	13.39	50.90
20. Cordilleran region	69.26	56.70	90.35	13.12	11.58	65.70	112.24	23.05	18.06
21. Pacific Coast region	27.56	30.93	49.57	15.91	25.07	28.98	8.54	6.62	27.35

The geographical distribution of deaths from diphtheria in the several grand groups is shown in map No. 6.

The following table shows, for each grand group, the proportion of deaths from croup during the census year, per 1,000 deaths from known causes, with distinction of sex and color, of rural districts and cities, and of children of mothers born in Ireland and in Germany:

GRAND GROUPS.	Total.	RURAL.		CITIES.		White.	Colored.	MOTHERS BORN IN—	
		Males.	Females.	Males.	Females.			Ireland.	Germany.
1. North Atlantic Coast region	10.05	9.85	9.73	9.88	10.50	10.20	0.97	8.00	9.64
2. Middle Atlantic Coast region	13.72	12.90	11.69	14.65	13.35	14.39	7.55	7.29	15.68
3. South Atlantic Coast region	5.99	7.06	7.82	1.62	2.81	6.18	4.59	.....	8.47
4. Gulf Coast region	10.98	12.63	20.08	6.22	4.31	11.75	9.83	.....	.....
5. Northeastern hills and plateaus	12.43	10.07	10.96	19.93	12.42	12.48	5.68	10.72	14.65
6. Central Appalachian region	19.57	18.77	19.14	21.00	23.16	19.87	6.61	12.00	17.18
7. Region of the Great Northern Lakes	17.87	11.69	12.39	19.82	21.63	18.68	1.13	6.87	20.42
8. Interior plateau	14.46	13.10	11.41	17.34	15.53	15.30	8.35	7.20	20.35
9. Southern Central Appalachian region	36.35	42.29	36.17	11.60	12.57	41.77	17.57	4.55	15.23
10. Ohio River belt	14.48	15.54	15.85	11.85	12.70	15.16	7.12	5.83	8.89
11. Southern Interior plateau	18.26	20.71	16.91	.....	2.73	20.20	16.62	.....	.....
12. South Mississippi River belt	13.02	11.77	16.65	6.69	7.95	16.08	11.08	.....	.....
13. North Mississippi River belt	15.28	20.17	18.49	10.06	11.43	15.54	10.87	6.46	15.64
14. Southwest Central region	25.13	26.18	25.67	9.37	13.03	26.72	16.23	.....	8.13
15. Central region, plains and prairies	14.80	16.58	14.25	10.84	8.87	15.24	11.41	3.05	8.99
16. Prairie region	18.38	19.37	17.42	17.71	14.51	18.56	9.93	6.70	13.35
17. Missouri River belt	24.31	27.18	23.15	24.73	19.28	26.99	4.07	11.41	13.13
18. Region of the Western plains	18.16	16.75	20.40	19.95	14.16	18.84	5.96	5.46	18.87
19. Heavily timbered region of the Northwest	9.92	10.85	8.86	.....	.....	10.09	2.67	5.35	11.88
20. Cordilleran region	17.39	15.59	20.66	13.12	15.44	17.98	10.20	5.12	6.57
21. Pacific Coast region	15.00	18.33	23.22	8.97	14.20	15.86	3.42	4.42	12.87

The geographical distribution of deaths from croup in the several grand groups is shown in map No. 7.

The following table shows, for each grand group, the proportion of deaths from diphtheria and croup combined, during the census year, per 1,000 deaths from known causes, with distinction of sex and color, of rural districts and cities, and of children of mothers born in Ireland and in Germany:

GRAND GROUPS.	Total.	RURAL.		CITIES.		White.	Colored.	MOTHERS BORN IN—	
		Males.	Females.	Males.	Females.			Ireland.	Germany.
1. North Atlantic Coast region	46.05	34.56	33.70	51.09	53.33	46.38	27.03	40.52	77.84
2. Middle Atlantic Coast region	46.78	37.10	42.16	47.41	49.69	49.65	20.35	32.38	53.45
3. South Atlantic Coast region	13.95	14.32	21.34	2.70	5.06	21.24	9.31	.....	8.47
4. Gulf Coast region	21.25	18.56	27.84	17.59	21.81	24.60	16.25	10.99	15.63
5. Northeastern hills and plateaus	47.82	39.98	44.04	61.73	55.17	47.87	39.77	38.30	62.27
6. Central Appalachian region	67.65	64.59	74.01	55.64	70.40	68.71	21.16	42.87	70.95
7. Region of the Great Northern Lakes	63.92	53.03	63.55	59.80	75.02	64.57	12.42	26.07	72.93
8. Interior plateau	43.97	40.60	40.88	45.61	48.50	47.57	17.88	30.86	63.30
9. Southern Central Appalachian region	56.60	61.49	61.86	14.72	17.28	66.66	22.13	4.55	20.30
10. Ohio River belt	50.27	44.21	46.23	55.33	64.85	52.90	21.68	29.16	52.28
11. Southern Interior plateau	26.75	28.58	26.25	4.65	8.19	33.07	21.64	.....	.....
12. South Mississippi River belt	20.16	17.28	23.22	18.95	25.44	22.84	18.47	.....	.....
13. North Mississippi River belt	61.26	71.26	72.51	44.37	55.80	63.45	24.03	30.45	72.51
14. Southwest Central region	32.17	32.06	34.28	12.97	20.63	34.36	22.73	5.83	15.36
15. Central region, plains and prairies	34.35	33.86	34.88	36.44	31.74	36.26	19.56	10.97	28.53
16. Prairie region	71.16	64.93	77.76	77.05	77.72	72.33	14.51	42.97	82.86
17. Missouri River belt	76.82	73.43	86.06	67.45	76.59	86.00	7.45	49.43	80.81
18. Region of the Western plains	99.78	94.59	127.16	69.82	80.26	103.55	31.81	38.25	69.13
19. Heavily timbered region of the Northwest	53.99	53.77	54.24	.....	.....	55.09	8.02	18.74	62.78
20. Cordilleran region	86.65	72.29	117.01	26.24	27.02	83.69	122.45	28.17	24.63
21. Pacific Coast region	42.56	49.26	72.79	24.88	39.36	44.84	11.96	11.04	40.23

The geographical distribution of deaths from diphtheria and croup combined, in the several grand groups, is shown is map No. 8.

The following table shows, for each grand group, the aggregate proportion of deaths from diphtheria, from croup, and from diphtheria and croup combined, during the census year, per 1,000 deaths from known causes, in each grand group:

GRAND GROUPS.	Diphtheria.	Croup.	Diphtheria and croup.
1. North Atlantic Coast region	36.00	10.05	46.05
2. Middle Atlantic Coast region	33.06	13.72	46.78
3. South Atlantic Coast region	7.06	5.99	13.05
4. Gulf Coast region	10.27	10.98	21.25
5. Northeastern hills and plateaus	35.39	12.43	47.82
6. Central Appalachian region	48.08	19.57	67.65
7. Region of the Great Northern Lakes	46.05	17.87	63.92
8. Interior plateau	29.51	14.46	43.97
9. Southern Central Appalachian region	20.34	36.35	56.69
10. Ohio River belt	35.79	14.48	50.27
11. Southern Interior plateau	8.49	18.26	26.75
12. South Mississippi River belt	7.14	13.02	20.16
13. North Mississippi River belt	45.98	15.28	61.26
14. Southwest Central region	7.04	25.13	32.17
15. Central region, plains and prairies	19.55	14.80	34.35
16. Prairie region	52.78	18.38	71.16
17. Missouri River belt	52.51	24.31	76.82
18. Region of the Western plains	81.62	18.16	99.78
19. Heavily timbered region of the Northwest	44.07	9.92	53.99
20. Cordilleran region	69.26	17.30	86.56
21. Pacific Coast region	27.56	15.00	42.56

It will be seen from these tables and maps that diphtheria caused the greatest proportion of all deaths from known causes in the region of the Western plains (81.62), in the Cordilleran region (69.26), and in the Prairie region (52.78).

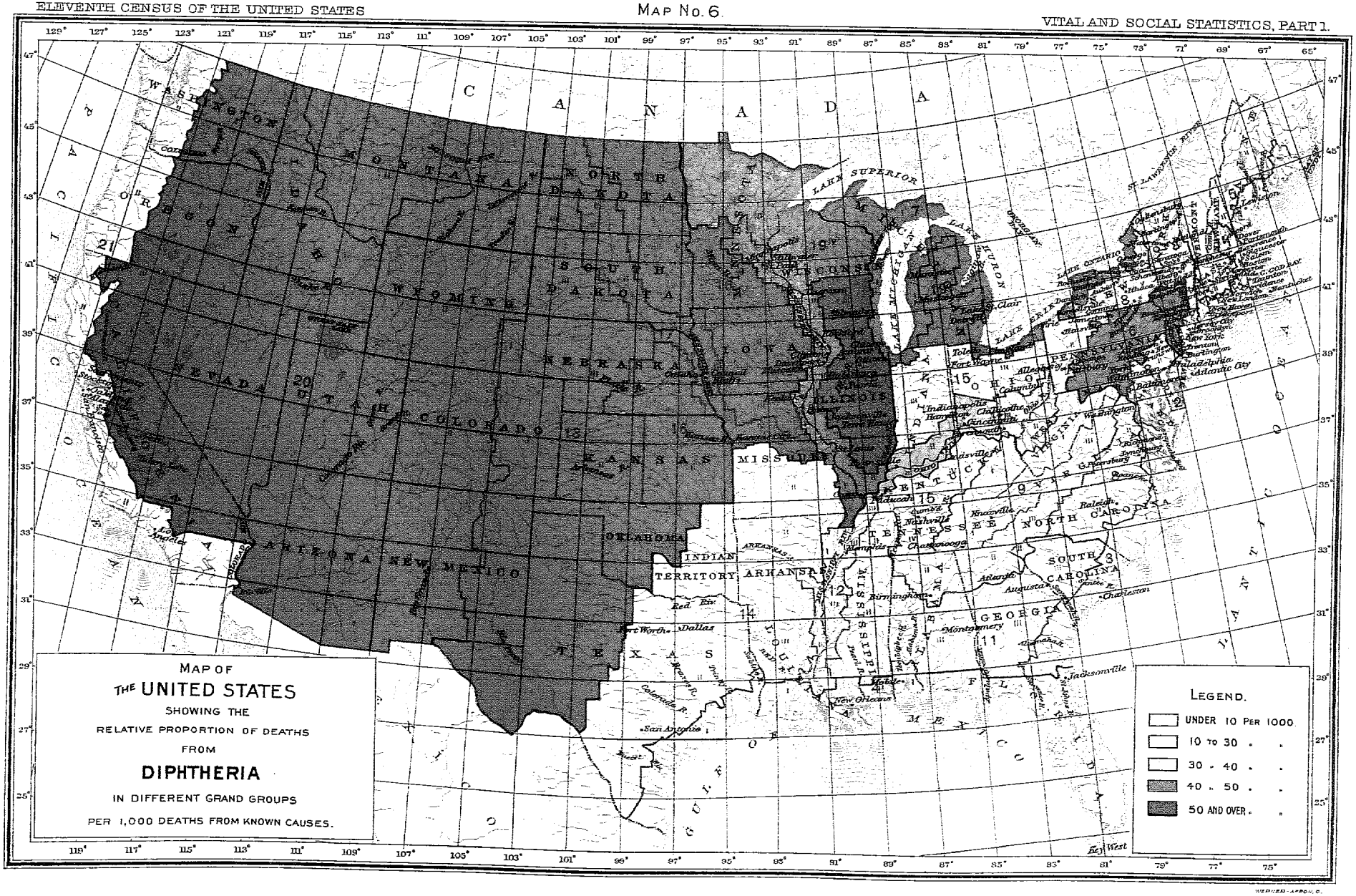
The greatest proportion of deaths from croup occurred in the Southern Central Appalachian region (36.35), in the Southwest Central region (25.13), and in the Missouri River belt (24.31).

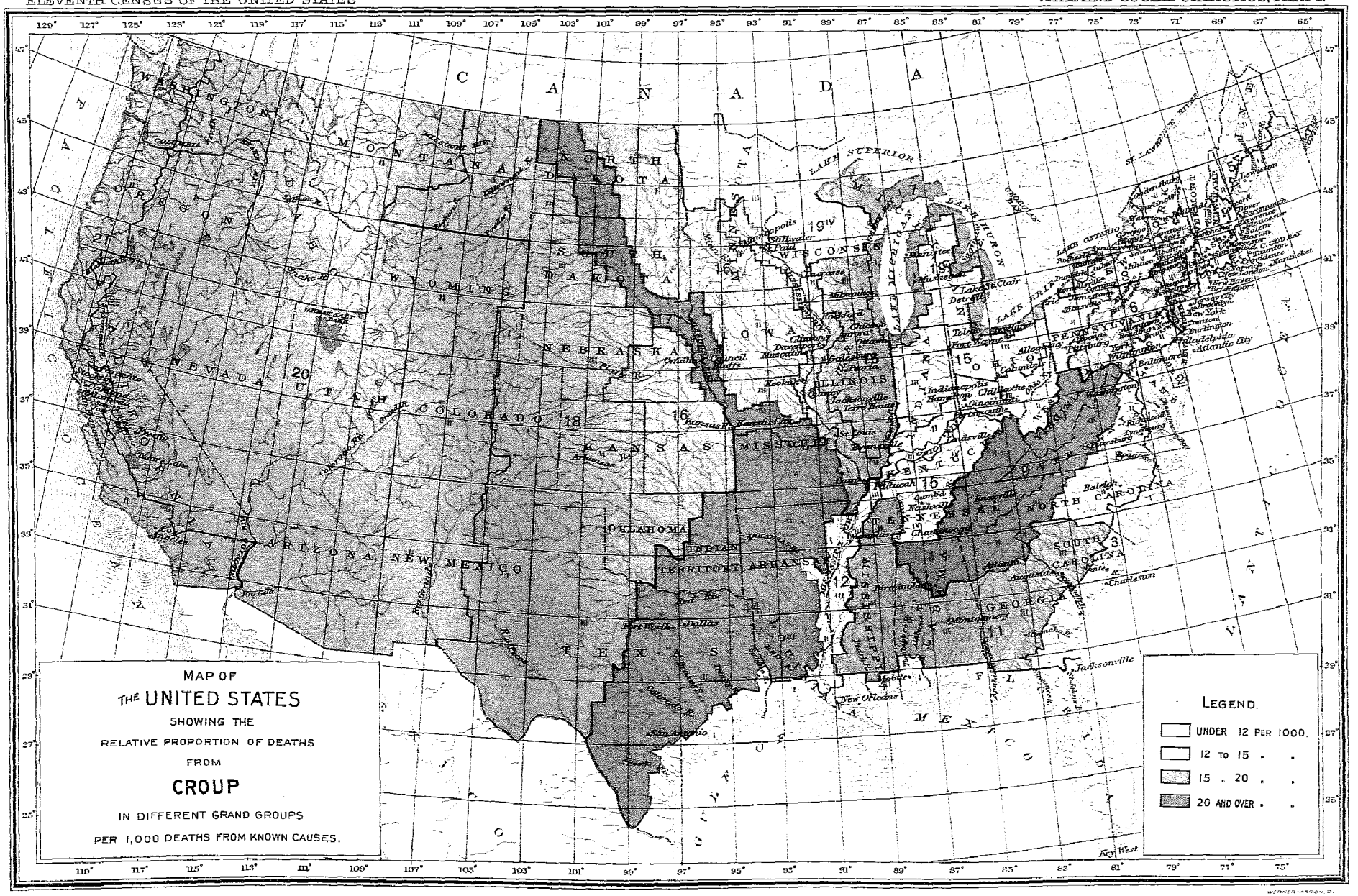
Taking the two together, the greatest proportion of deaths from diphtheria and croup occurred in the region of the Western plains (99.78), the Cordilleran region (86.56), and the Missouri River belt (76.82).

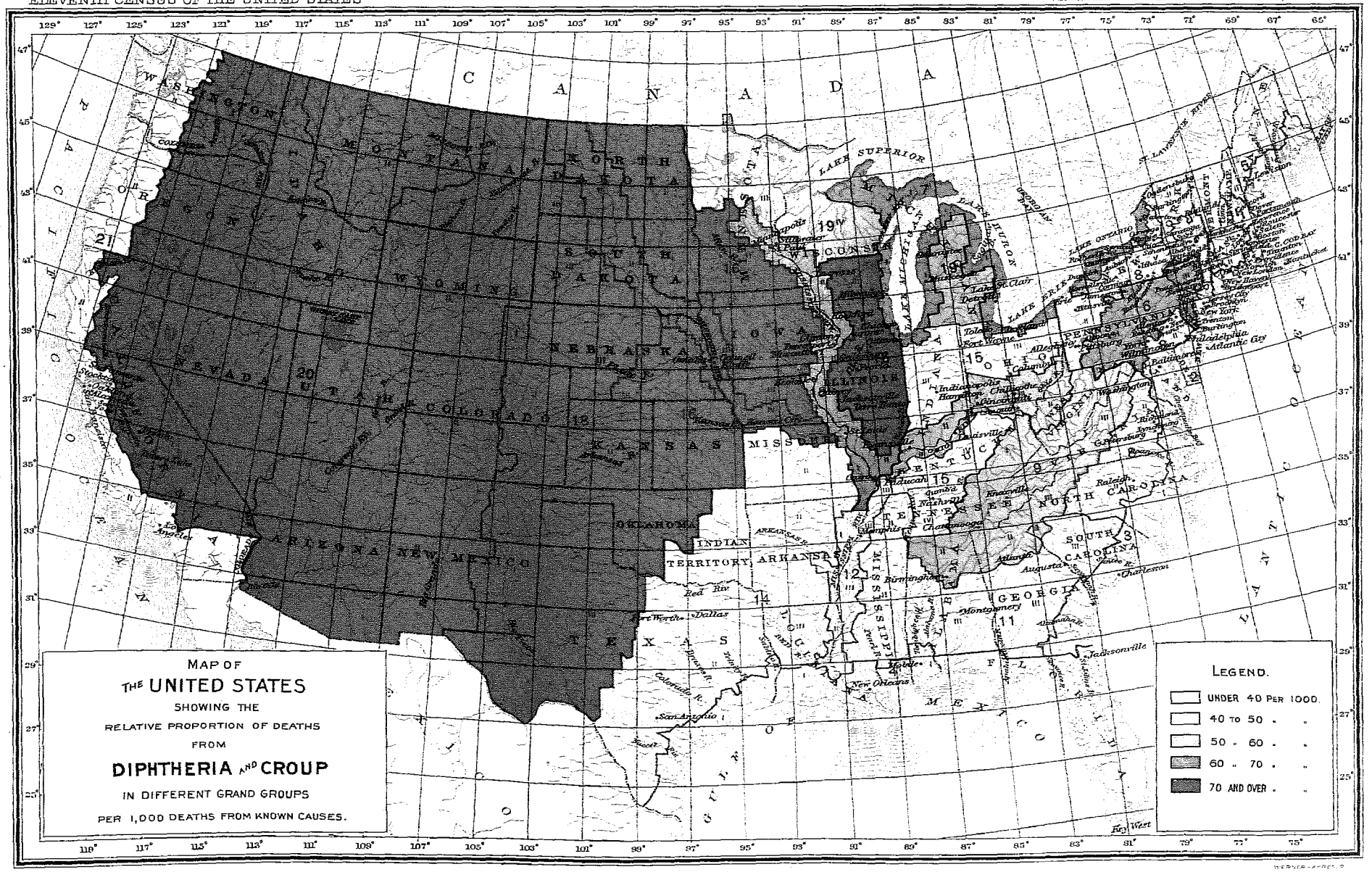
The geographical distribution of deaths from diphtheria and croup by state groups, per 1,000 deaths from known causes in each group, is shown in map No. 9.

The following table shows, for the sum of Grand Groups 1, 2, and 5, which were mainly registration areas, the number of deaths from diphtheria in each month during the census year, and the death rates per 100,000 of population, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			RATE.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.
June	618	502	116	5.90	8.02	2.75
July	460	368	92	4.39	5.88	2.18
August	504	412	92	4.81	6.58	2.18
September	566	420	146	5.40	6.71	3.46
October	722	532	190	6.89	8.50	4.50
November	653	479	174	6.23	7.65	4.12
December	763	603	160	7.28	9.63	3.79
January	702	516	186	6.70	8.24	4.41
February	638	464	174	6.09	7.41	4.12
March	601	464	137	5.73	7.41	3.25
April	558	422	136	5.32	6.74	3.22
May	573	421	152	5.47	6.73	3.60

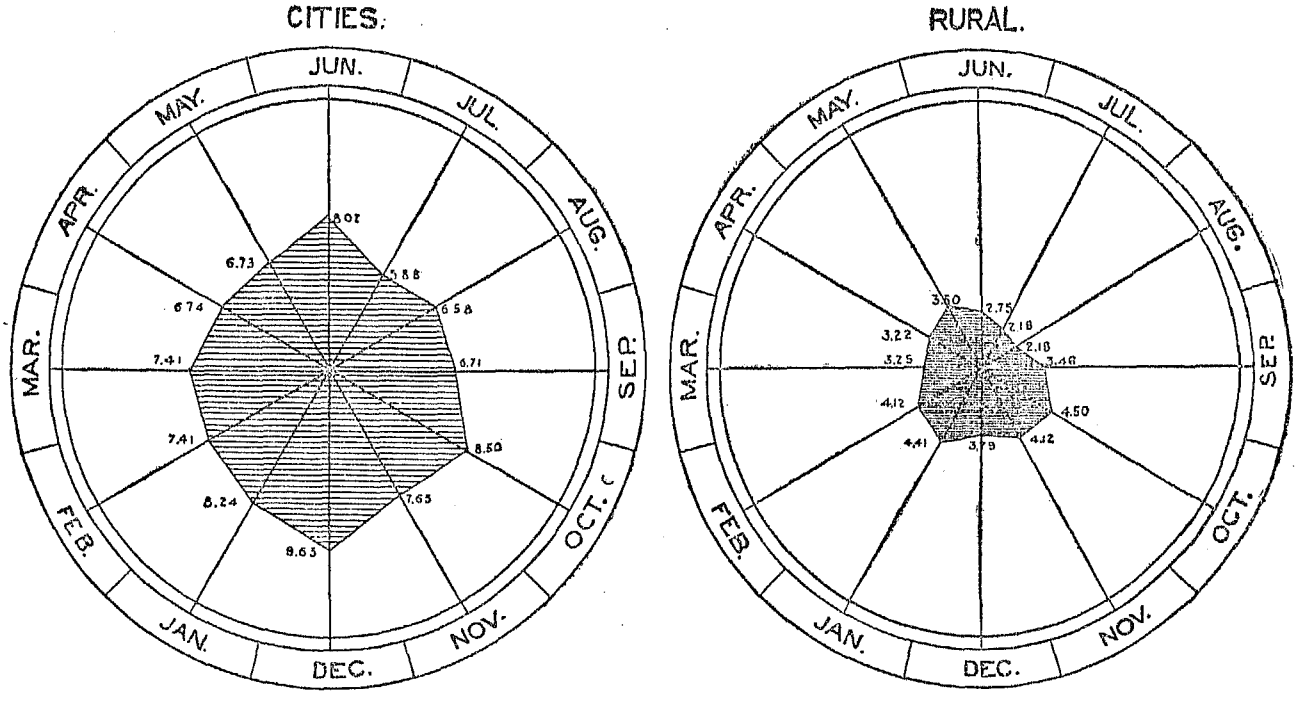

MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
FROM
DIPHTHERIA
IN DIFFERENT GRAND GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.
LEGEND.
UNDER 10 PER 1000
10 TO 30 " "
30 " 40 " "
40 " 50 " "
50 AND OVER " "
CANADA
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
INDIAN TERRITORY
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MEXICO
GULF OF MEXICO
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO


MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
FROM
CROUP
IN DIFFERENT GRAND GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.
LEGEND.
UNDER 12 PER 1000.
12 TO 15 " "
15 " 20 " "
20 AND OVER " "
CANADA
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
INDIAN TERRITORY
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
OHIO
INDIANA
PENNSYLVANIA
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS
RHODE ISLAND
CONNECTICUT
NEW JERSEY
DELAWARE
MARYLAND
LAKE SUPERIOR
LAKE MICHIGAN
LAKE ERIE
LAKE ONTARIO
GULF OF MEXICO
ATLANTIC OCEAN


MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
FROM
DIPHTHERIA AND CROUP
IN DIFFERENT GRAND GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.
LEGEND.
UNDER 40 PER 1000.
40 TO 50 . .
50 . 60 . .
60 . 70 . .
70 AND OVER . .
CANADA
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
INDIAN TERRITORY
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
MEXICO
GULF OF MEXICO

It will be seen from the preceding table that the highest death rate from diphtheria occurred in December (7.28), in October (6.89), and in January (6.70), and the lowest in July (4.39), in August (4.81), and in April (5.32).

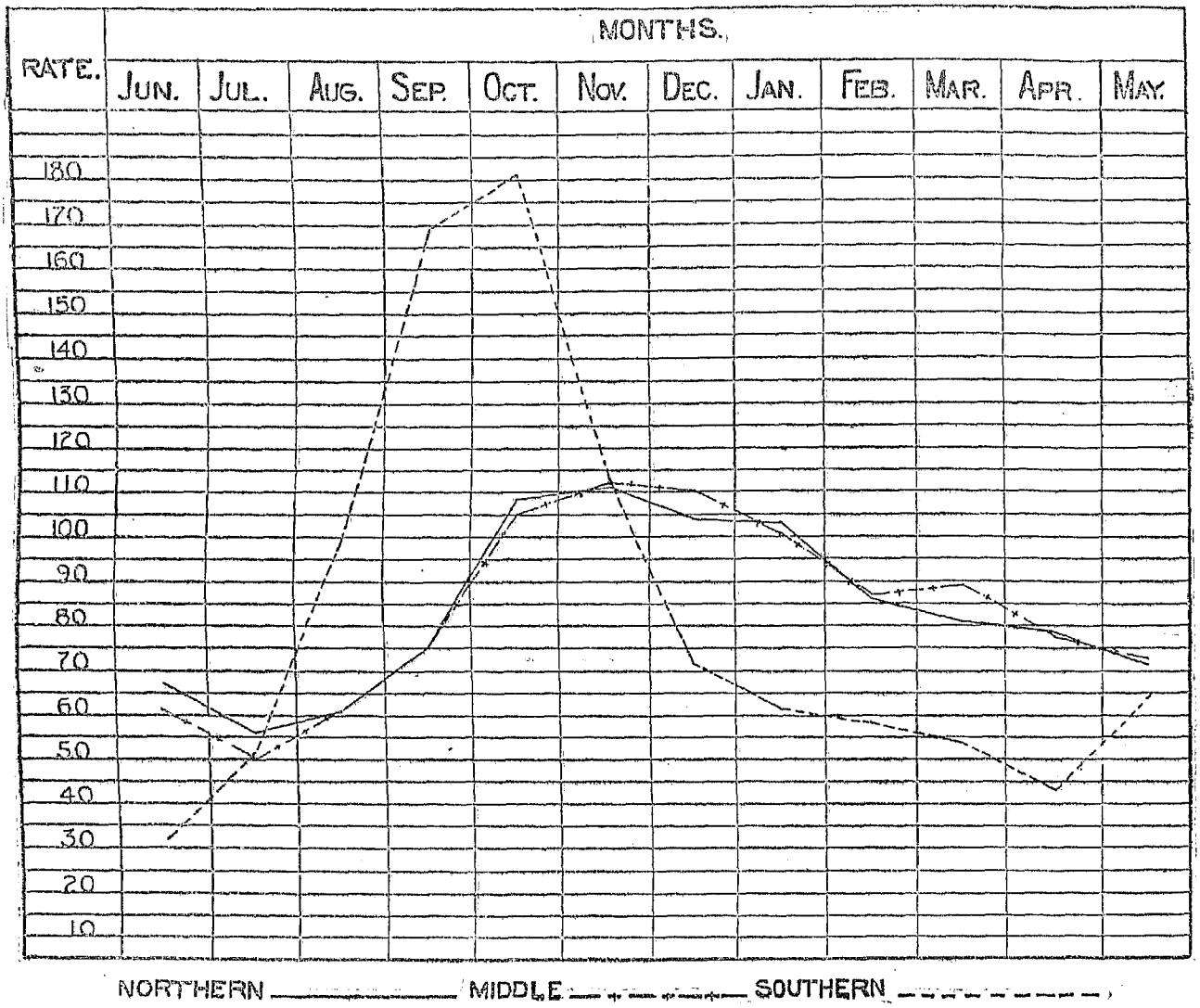
The death rates in each month, as given in the preceding table, and the relative magnitude of the rates in the cities and the rural districts, are shown graphically in the following diagram:



The following table shows, for three divisions of grand groups, namely: Northern, Middle, and Southern, the number of deaths from diphtheria, under 5 years of age, in each month of the census year, and the proportion in each month per 1,000 deaths from this disease in children under 5 years of age.

MONTHS.	NORTHERN REGION. GRAND GROUPS 1, 5, 7, 13, 17, AND 19.		MIDDLE REGION. GRAND GROUPS 2, 6, 8, 10, 15, 16, 18, 20, AND 21.		SOUTHERN REGION. GRAND GROUPS 3, 4, 9, 11, 12, AND 14.	
	Deaths.	Proportion.	Deaths.	Proportion.	Deaths.	Proportion.
June	309	66.61	515	60.89	32	31.71
July	258	55.62	424	50.18	52	51.54
August	282	60.79	519	61.36	99	98.12
September	349	75.23	636	75.20	171	169.47
October	499	107.57	884	104.52	183	181.37
November	514	110.80	944	111.61	114	112.98
December	483	104.12	929	109.84	73	72.35
January	479	103.26	851	100.61	63	62.44
February	398	85.79	737	87.14	59	58.47
March	375	80.84	756	89.38	54	53.52
April	361	77.82	647	76.50	43	42.62
May	332	71.57	616	72.83	66	65.41

The relative proportion of deaths in each month in the several divisions, indicated in the preceding table, is shown in the following diagram:



The preceding table and diagram indicate that in the Middle and Southern regions the greatest proportion of deaths of children under 5 years of age from diphtheria occurred during the month of October, and that in this month it was decidedly greater in the Southern region than it was in the Middle or Northern. In the Northern region it was highest in November. The least proportion of deaths from these causes occurred in July in the Northern and Middle regions, and in June in the southern belt.

While this table and diagram relate only to children who, as a rule, were not attending school, it must be remembered that they would be subjected to the influence of the contagion developed in aggregations of children in schools through their older brothers and sisters who were attending them. The rapid decrease in the proportion of deaths from October to January in the Southern region is in marked contrast to the gradual decrease in the proportions in the Northern and Middle regions.

MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
DUE TO
DIPHTHERIA AND CROUP
IN DIFFERENT STATE GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.

LEGEND.

- UNDER 30 PER 1000.
- 30 TO 40 " "
- 40 " 60 " "
- 60 " 80 " "
- 80 " 100 " "
- 100 AND OVER " "

WHOOPING COUGH.

The total number of deaths reported as due to whooping cough in the United States, during the census year, was 8,432, of which 3,821 were males and 4,611 were females. In the registration area the number of deaths reported as due to this cause was, males, 1,381; females, 1,717; total, 3,098; giving a death rate of 15.76 per 100,000 of population. In 1890 the corresponding death rates from this cause were, in England and Wales, 47.8; in Ireland, 31.3; in Scotland, 75.9; in Italy, 43.4; in Belgium, 68.6; in Austria, 102.3; in Prussia, 57.8; being higher in all these countries than it was in the United States.

During the 10 years, 1880 to 1889, the death rates from whooping cough per 100,000 population were, in England and Wales, 45.6; in Ireland, 30.6; in Scotland, 60.0; in Sweden, 18.0; in Norway, 17.6; in Prussia, 51.7; in Austria, 110.0; in Saxony, 27.5; in Massachusetts, 12.4; in Connecticut, 11.7; in Rhode Island, 14.2; and in New Jersey, 14.6.

The following table shows, for the registration area and some of its subdivisions, the death rates from whooping cough, during the census year, per 100,000 of population, with distinction of color, sex, general nativity, and parental nativity:

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
Registration area	15.76	15.37	13.74	17.00	20.45	15.78	32.11	1.38	23.35	21.07	25.56
Cities	17.34	17.00	15.22	18.77	23.78	21.05	35.33	1.41	22.80	20.59	24.92
States	13.16	17.80	16.08	19.43	23.42	16.87	35.97	1.54	33.81	29.49	37.90
Cities	23.04	22.69	20.71	24.58	32.78	23.69	42.03	1.69	35.80	31.21	39.90
Rural	10.72	10.30	9.23	11.52	12.08	9.90	19.60	1.25	29.22	25.86	32.82
Cities in nonregistration states	12.09	11.40	10.00	12.84	15.43	15.33	19.91	1.15	19.13	17.77	20.57
Cities of 100,000 population and upward	12.23	16.85	.....	.....	24.57	23.30	35.86	1.18	24.77	.....	.....
Metropolitan district, 6 years	27.17	26.96	24.60	29.27	42.25	38.35	44.79	1.32	38.66	32.97	44.14

It will be seen from this table that the death rate from whooping cough per 100,000 of population was decidedly higher among the colored (23.35) than it was among the whites (15.37); that it was higher among the females (whites, 17.00; colored, 25.56) than it was among males (whites, 13.74; colored, 21.07), and that it was higher among the native born whites (20.45) than among the foreign born whites (1.38), which is mainly due to the difference of age distribution of the two classes of the population. Among the native born whites having one or both parents foreign born the death rate from this cause (32.11) was a little more than double that among those both of whose parents were native born (15.78). In the registration states the death rate from this disease was more than twice as high in the cities (23.04) as it was in the rural districts (10.72), and it was highest of all in the metropolitan district for the 6-year period (27.17).

The following table shows, for each of the registration states and for their sum, the death rates from whooping cough during the census year, per 100,000 of population, with distinction of sex, of color, and of cities and rural districts:

REGISTRATION STATES.	AGGREGATE.			MALES.			FEMALES.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.	Total.	Cities.	Rural.
Total	18.16	23.04	10.72	16.38	20.98	9.57	19.91	24.99	11.89
Connecticut	18.76	27.07	12.85	15.15	20.36	11.51	22.30	33.53	14.13
Delaware	5.03	9.77	3.74	3.51	6.49	1.83	8.44	13.06	5.74
District of Columbia	13.02	13.02	.....	12.78	12.78	.....	13.24	13.24	.....
Massachusetts	16.30	18.54	8.97	14.99	16.66	9.65	17.55	20.31	8.30
New Hampshire	9.83	9.95	9.77	10.18	9.59	10.41	9.48	10.28	9.12
New Jersey	26.02	30.53	20.12	22.80	26.90	17.75	29.14	34.09	22.54
New York	18.04	23.96	8.46	16.49	22.42	7.23	19.56	25.45	9.73
Rhode Island	29.52	31.99	26.13	27.38	29.20	24.95	31.55	34.55	27.29
Vermont	4.81	10.60	4.27	2.95	7.38	2.57	6.74	13.56	6.07

It will be seen from the preceding table that the death rate from whooping cough was highest in Rhode Island (29.52) and New Jersey (26.02), and lowest in Vermont (4.81) and in Delaware (5.93). In the rural districts it was highest in Rhode Island (26.13), and lowest in Delaware (3.74). It was higher among the females than among the males in every state except New Hampshire and New York, and was more than twice as high in the aggregate in the cities (23.04) as it was in the rural districts (10.72), but in New Hampshire the difference was small (cities, 9.95; rural, 9.77). In the aggregate it was much higher among the colored (33.81) than it was among the whites (17.80), but in Connecticut it was highest among the whites. In New Hampshire there were no deaths from this cause among the colored, and in Vermont there was but 1, so that these ratios for this state have no scientific value.

Of 2,443 deaths from whooping cough in whites in the registration area, during the census year, 1,114 were in children of mothers born in the United States, 388 were in children of mothers born in Ireland, 258 were in children of mothers born in Germany, 161 were in children of mothers born in Canada, 89 were in children of mothers born in England and Wales, 48 were in children of mothers born in Scandinavia, 28 were in children of mothers born in Scotland, 23 were in children of mothers born in Bohemia, 9 were in children of mothers born in Hungary, and 4 were in children of mothers born in France.

The following table shows, for the registration area and some of its subdivisions, the death rates from whooping cough among the whites, during the census year, per 100,000 of white population, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
Registration area	16.06	12.74	14.59	13.74	4.88	12.14	23.93	13.95	28.12	56.50	34.27	17.58
Cities	21.46	14.75	16.18	14.15	6.14	13.11	28.53	11.10	32.25	58.58	38.35	19.24
States	16.98	14.44	15.65	14.47	6.95	13.87	25.37	23.58	35.71	96.44	39.37	16.55
Cities	25.97	18.00	17.90	15.32	9.81	15.91	31.80	20.83	42.64	106.34	45.17	18.76
Rural	9.55	7.10	8.59	12.40	.....	5.08	15.14	30.09	.....	.....	9.95	4.19
Cities in nonregistration states	11.64	5.83	7.64	10.55	.....	9.04	12.21	4.14	.....	31.80	.....	20.32
Cities of 100,000 population and upward	27.53	12.39	17.14	16.60	4.48	13.92	36.28	9.63	32.71	62.67	38.86	17.98

It will be seen from this table that the death rate from whooping cough was highest among those whose mothers were born in Bohemia (56.50), in Italy (34.27), and in Hungary (28.12), and, excluding the figures for those whose mothers were born in France, as the total number of deaths was too small to give a reliable ratio, the lowest death rates from this cause occurred in children of mothers born in Germany (12.14), in England and Wales (12.74), and in Scotland (13.74). The death rate was comparatively high in children of mothers born in Canada (23.93), and it was slightly above the average in children of mothers born in the United States (16.06).

The following table shows, for the registration area and some of its subdivisions, the death rates from whooping cough, during the census year, in each of four age groups, per 100,000 population of corresponding ages, with distinction of sex:

AREAS.	UNDER 1 YEAR.			UNDER 5 YEARS.			5 TO 15 YEARS.			15 YEARS AND OVER.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
Registration area	411.86	393.55	430.66	147.12	131.63	162.94	3.35	2.30	4.40	0.12	0.07	0.17
Cities	428.10	407.56	449.17	157.22	140.37	174.38	3.44	2.32	4.55	0.10	0.06	0.15
States	500.77	491.30	510.50	177.69	158.96	196.74	3.75	2.69	4.82	0.17	0.07	0.25
Cities	583.30	574.06	592.77	217.30	193.97	240.87	4.23	3.02	5.42	0.16	0.04	0.27
Rural	346.96	337.81	356.42	109.76	99.44	120.38	3.04	2.21	3.91	0.18	0.12	0.24
Cities in nonregistration states	292.35	262.17	323.35	105.30	94.35	116.52	2.76	1.71	3.80	0.06	0.07	0.04
Cities of 100,000 population and upward	394.91	375.32	415.00	151.00	137.09	165.15	3.31	1.95	4.66	0.12	0.06	0.18
Metropolitan district	583.63	599.36	567.45	227.95	209.22	246.84	3.69	2.88	4.50	0.30	0.18	0.60

It will be seen from this table that the highest death rate from whooping cough occurred in children under 1 year of age, being 411.86 per 100,000 of that age group. For each 100,000 of population under 5 years of age the death rate from whooping cough was, females, 162.94; males, 131.63. In the cities in the registration states the death rate from this disease was, females, 240.87; males, 193.97; and in the metropolitan district it was, females, 246.84; males, 209.22.

The combined relations of age and race to the death rates from whooping cough are indicated in the following table, showing the number of deaths in each of three age groups, and the death rates per 100,000 population of corresponding ages, with distinction of color, and, for the whites, of birthplaces of mothers, the data being derived from a combination of the returns from Boston, Brooklyn, Cincinnati, New York city, the District of Columbia, and the state of New Jersey for the census year:

COLOR AND BIRTHPLACES OF MOTHERS.	UNDER 1 YEAR.		UNDER 5 YEARS.		5 TO 15 YEARS.	
	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.
White	596	569.16	1,080	222.70	33	3.82
Colored	37	1,032.08	75	478.29	8	9.26
Birthplaces of mothers (white):						
United States	304	577.49	534	216.18	15	3.67
England and Wales	29	707.14	41	240.23	2	5.77
Ireland	94	658.13	195	295.34	11	7.30
Scotland	5	436.30	10	183.96	1	9.38
Germany	71	424.39	146	181.99	1	0.62
Canada	12	728.60	24	323.06	.....	.....
Scandinavia	10	639.39	14	210.91	.....	.....
Bohemia	10	2,186.18	15	761.81	.....	.....
Italy	23	623.29	38	252.74	1	5.95

It will be seen from this table that in children under 5 years of age the death rate from whooping cough was more than twice as high among the colored (478.29) as it was among the whites (222.70), that among the whites it was highest among the children of mothers born in Bohemia (761.81), in Canada (323.06), and in Ireland (295.34), and that it was below the average in children of mothers born in Germany (181.99), in Scotland (183.96), and in the United States (216.18).

For further details with regard to death rates from whooping cough in large cities see Part II of this report, page 107.

Out of 100,000 deaths from all causes, in the United States during the census year, 963 were reported as due to whooping cough, the corresponding figures in 1880 having been 1,460, and in 1870, 1,830. In England and Wales the corresponding proportion in 1890 was 2,446, and in 1880, 2,590. In Austria in 1890 it was 3,480; in Prussia, 2,410; in Belgium, 3,290; in Scotland, 3,840; in Italy, 1,650; and in Ireland, 1,730. The number of deaths due to whooping cough in children under 15 years of age per 1,000 of all deaths from known causes, in persons under 15 years of age in the United States, during the census year was, for whites, 23.06; for colored, 28.87; and for Indians, 68.87. In the registration area it was 17.50.

The following table shows, for the United States and for the registration area and some of its subdivisions, the proportion of deaths from whooping cough during the census year per 1,000 deaths from known causes, excluding stillbirths, with distinction of color, sex, nativity, and parental nativity:

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
The United States	10.45	10.00	8.52	11.68	12.31	12.41	14.09	0.81	13.52	12.18	14.91
Registration area	8.12	8.12	6.86	9.53	10.87	9.25	15.09	0.72	8.11	6.95	9.36
Cities	8.35	8.42	7.06	9.96	11.65	11.18	15.23	0.71	7.63	6.52	8.83
States	9.43	9.33	8.02	10.74	12.41	9.25	16.59	0.78	12.47	10.32	14.73
Cities	10.46	10.42	8.91	12.08	14.75	11.91	17.09	0.79	11.43	9.24	13.70
Rural	7.12	6.93	6.06	7.85	8.16	6.56	14.18	0.78	16.78	14.67	19.12
Cities in nonregistration states	6.16	6.11	5.00	7.41	8.24	9.28	9.97	0.62	6.51	5.73	7.35
Cities of 100,000 population and upward	8.01	8.00	.....	.....	11.40	12.11	14.99	0.59	8.07	.....	.....
Metropolitan district, 6 years	10.90	10.83	9.22	12.64	15.74	14.08	16.85	0.61	14.33	11.30	17.75

The preceding table indicates that the proportion of deaths from whooping cough was somewhat greater in the United States as a whole, per 1,000 deaths from known causes (10.45), than it was in the registration area (8.12), and in the United States as a whole it was greater among the colored (13.52) than it was among the whites (10.00); that it was greater among females than among males, and among the native born white children with one or both parents foreign born than among those having both parents native born, thus corresponding with the death rates per 100,000 of population for the registration area given in the preceding table.

The following table shows, for the United States and for the registration area and some of its subdivisions, the proportion of deaths from whooping cough among the whites during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
The United States	14.35	7.58	6.19	7.32	2.39	6.40	14.18	8.35	12.40	13.11	12.76	8.82
Registration area	11.77	7.75	6.93	8.50	3.00	7.13	14.85	8.94	12.59	21.00	13.50	9.01
Cities	13.75	8.50	7.07	8.32	3.02	7.42	15.04	6.87	13.43	21.32	13.67	9.35
States	11.77	8.56	7.21	8.48	4.12	7.74	15.47	13.70	15.99	32.12	14.81	9.59
Cities	14.23	9.85	7.43	8.26	5.37	8.39	16.61	10.02	17.37	33.26	15.08	10.19
Rural	8.47	50.0	6.05	9.23	.....	4.09	12.58	24.18	.....	.....	10.53	3.88
Cities in nonregistration states	11.83	3.94	4.56	8.60	.....	5.85	8.86	2.04	.....	12.74	.....	7.97
Cities of 100,000 population and upward	14.60	6.01	6.60	8.77	2.45	7.48	17.32	5.52	14.26	21.82	13.25	8.28

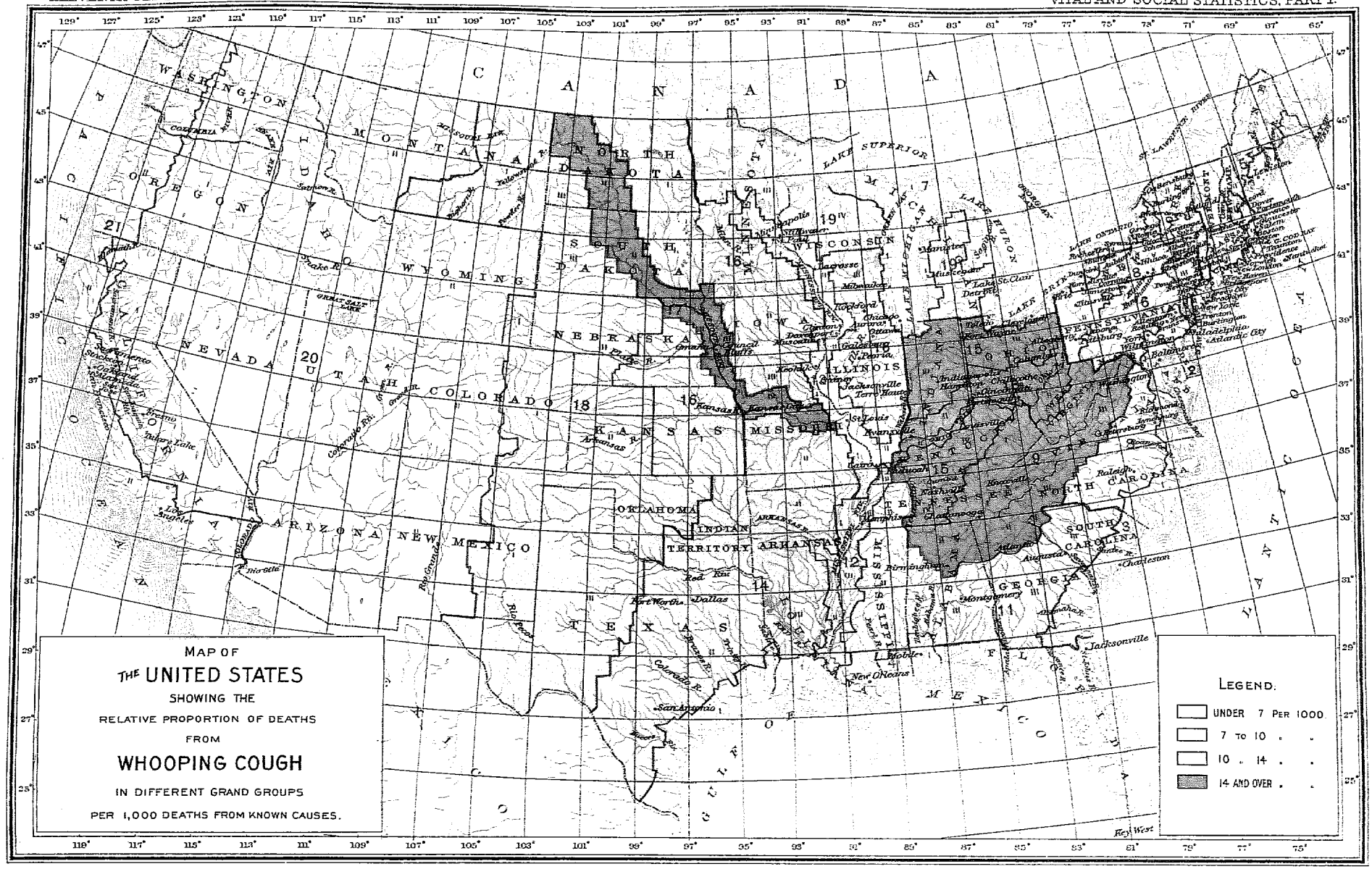
A comparison of this table with the preceding table showing the death rates from whooping cough per 100,000 of population, with distinction of birthplaces of mothers, indicates some of the erroneous conclusions which are likely to be drawn from a comparison of the proportion of deaths from a given cause in 1,000 deaths from known causes with the death rate from the same cause in different groups of population. The proportion in the above table would indicate that the highest death rate from whooping cough occurred in the children of mothers born in the United States and Canada, whereas, as a matter of fact, the highest death rates from this cause, in proportion to the population, occurred in children of mothers born in Bohemia and Hungary.

The following table shows the proportion of deaths from whooping cough, at certain ages and groups of ages per 1,000 deaths at all ages from this cause, in 1880 and in 1890, with distinction of sex:

AGES.	1880		1890		AGES.	1880		1890	
	Males.	Females.	Males.	Females.		Males.	Females.	Males.	Females.
Total under 5 years	937.49	930.90	936.17	918.61	35 to 40 years	.....	0.17	1.05	1.53
Under 1 year	580.57	498.56	567.04	511.89	40 to 45 years	0.59	0.17	0.53	0.44
1 year	230.51	224.36	207.78	217.11	45 to 50 years	.....	0.17	.....	0.65
2 years	102.36	118.43	95.88	104.52	50 to 55 years	0.20	0.34	0.53	0.22
3 years	47.27	57.10	40.71	57.00	55 to 60 years	0.20	.....	.....	0.44
4 years	26.76	32.44	24.17	27.40	60 to 65 years	0.20	0.84	0.79	1.09
5 to 10 years	47.27	53.39	43.87	56.51	65 to 70 years	0.20	0.34	0.79	0.22
10 to 15 years	8.79	7.60	8.93	11.78	70 to 75 years	0.20	0.17	0.79	0.22
15 to 20 years	1.76	2.70	2.89	3.05	75 to 80 years	.....	0.17	0.26	0.22
20 to 25 years	1.17	1.35	2.10	2.62	80 to 85 years	0.20	0.17	0.26	0.44
25 to 30 years	1.17	1.18	0.26	1.09	85 to 90 years	0.20	.....	.....	0.22
30 to 35 years	0.39	0.34	0.79	0.65	90 to 95 years	.....	.....	.....	.....
					95 years and over	.....	.....	.....	.....

It will be seen from this table that at each census period over one-half of all the deaths caused by whooping cough occurred in children under 1 year of age, and that over 90 per cent occurred in children under 5 years of age. The proportion of deaths in children under 1 year of age was slightly less in females than in males in both censuses.

The average age at death from whooping cough in the United States in 1890 was 2.10 years; in the registration area it was 1.77 years. In 1880, in the United States it was 2 years.


MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
FROM
WHOOPING COUGH
IN DIFFERENT GRAND GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.
LEGEND.
UNDER 7 PER 1000.
7 TO 10 . .
10 . 14 . .
14 AND OVER . .
CANADA
WASHINGTON
OREGON
CALIFORNIA
NEVADA
IDAHO
MONTANA
WYOMING
UTAH
COLORADO
ARIZONA
NEW MEXICO
NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
INDIAN TERRITORY
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
SOUTH CAROLINA
NORTH CAROLINA
VIRGINIA
WEST VIRGINIA
PENNSYLVANIA
NEW YORK
MAINE
LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
LAKE ONTARIO
MEXICO
GULF OF MEXICO
ATLANTIC OCEAN
PACIFIC OCEAN

The following table shows for each grand group the proportion of deaths from whooping cough during the census year, per 1,000 deaths from known causes, with distinction of sex and color, of rural districts and cities, and of children of mothers born in Ireland and in Germany:

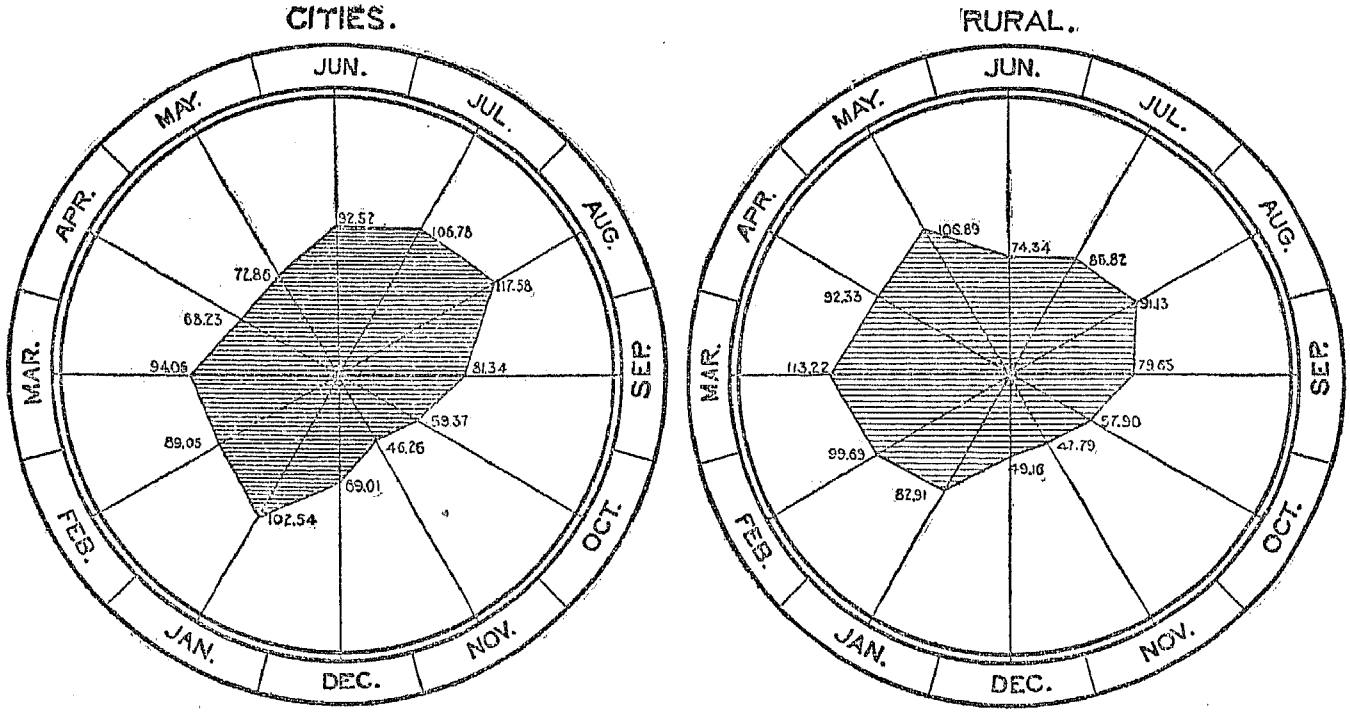
GRAND GROUPS.	Total.	RURAL.		CITIES.		White.	Colored.	MOTHERS BORN IN—	
		Males.	Females.	Males.	Females.			Ireland.	Germany.
1. North Atlantic Coast region	9.56	9.03	9.13	8.41	11.24	9.41	18.34	8.59	13.34
2. Middle Atlantic Coast region	9.20	7.93	10.68	7.84	10.89	9.14	10.34	6.85	7.31
3. South Atlantic Coast region	4.85	5.60	5.70	1.62	3.94	4.48	5.00	.....	.....
4. Gulf Coast region	6.09	10.52	10.50	0.86	1.52	4.08	8.20	.....	.....
5. Northeastern hills and plateaus	7.06	4.63	5.78	9.50	12.01	7.07	5.08	6.78	10.99
6. Central Appalachian region	10.05	9.59	12.60	6.00	6.71	9.80	21.16	4.46	8.33
7. Region of the Great Northern Lakes	7.85	6.09	9.08	6.67	9.64	7.72	18.06	5.93	7.28
8. Interior plateau	7.51	7.22	10.08	5.69	7.41	6.81	12.57	5.14	4.03
9. Southern Central Appalachian region	15.64	14.61	19.33	4.02	6.81	15.93	14.64	.....	5.08
10. Ohio River belt	15.05	16.42	21.96	5.78	9.83	14.89	16.83	5.18	4.60
11. Southern Interior plateau	11.11	10.78	11.88	6.20	2.73	10.92	11.26	.....	.....
12. South Mississippi River belt	13.57	13.48	18.29	.....	1.59	10.96	15.22	.....	.....
13. North Mississippi River belt	6.18	7.56	9.31	2.67	5.11	5.54	17.16	.....	2.98
14. Southwest Central region	12.88	10.45	16.69	5.04	4.34	12.77	13.34	.....	6.32
15. Central region, plains and prairies	14.31	13.77	17.37	3.01	6.83	13.48	20.70	1.83	8.10
16. Prairie region	10.43	9.36	11.74	8.86	9.33	10.28	17.57	3.07	5.07
17. Missouri River belt	18.29	15.56	24.91	11.24	19.28	14.44	47.43	.....	7.07
18. Region of the Western plains	13.57	11.86	21.07	6.65	5.67	11.90	43.74	5.46	12.58
19. Heavily timbered region of the Northwest	8.48	6.96	10.20	.....	.....	8.49	8.02	1.34	10.75
20. Cordilleran region	6.32	4.59	9.27	7.87	.....	6.84	.....	1.28	6.57
21. Pacific Coast region	6.94	8.02	12.48	2.54	8.36	6.31	15.37	1.10	3.22

The distribution of deaths from whooping cough in the several grand groups indicated in the table above is shown in map No. 10.

The following table shows, for the United States, the number of deaths from whooping cough in each month during the census year, and the proportion in each month per 1,000 deaths from this cause, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			PROPORTION IN EACH MONTH PER 1,000 TOTAL DEATHS.		
	United States.	Cities.	Rural.	United States.	Cities.	Rural.
Total	8,432	2,594	5,838	.....	.....	.....
June	674	240	434	79.93	92.52	74.34
July	778	277	501	92.27	106.78	85.82
August	837	305	532	99.26	117.58	91.13
September	676	211	465	80.17	81.34	79.65
October	492	154	338	58.35	59.37	57.90
November	399	120	279	47.32	46.26	47.79
December	466	179	287	55.27	69.01	49.16
January	750	266	484	88.95	102.54	82.91
February	813	231	582	96.42	89.05	99.69
March	905	244	661	107.33	94.06	113.22
April	716	177	539	84.91	68.23	92.33
May	813	189	624	96.42	72.86	106.89
Unknown	113	1	112	13.40	0.39	19.18

The relative proportion of deaths from whooping cough in each month in the cities and in the rural districts, as indicated in the preceding table, and the difference in the proportion of deaths in the two areas, is shown in the following diagram:

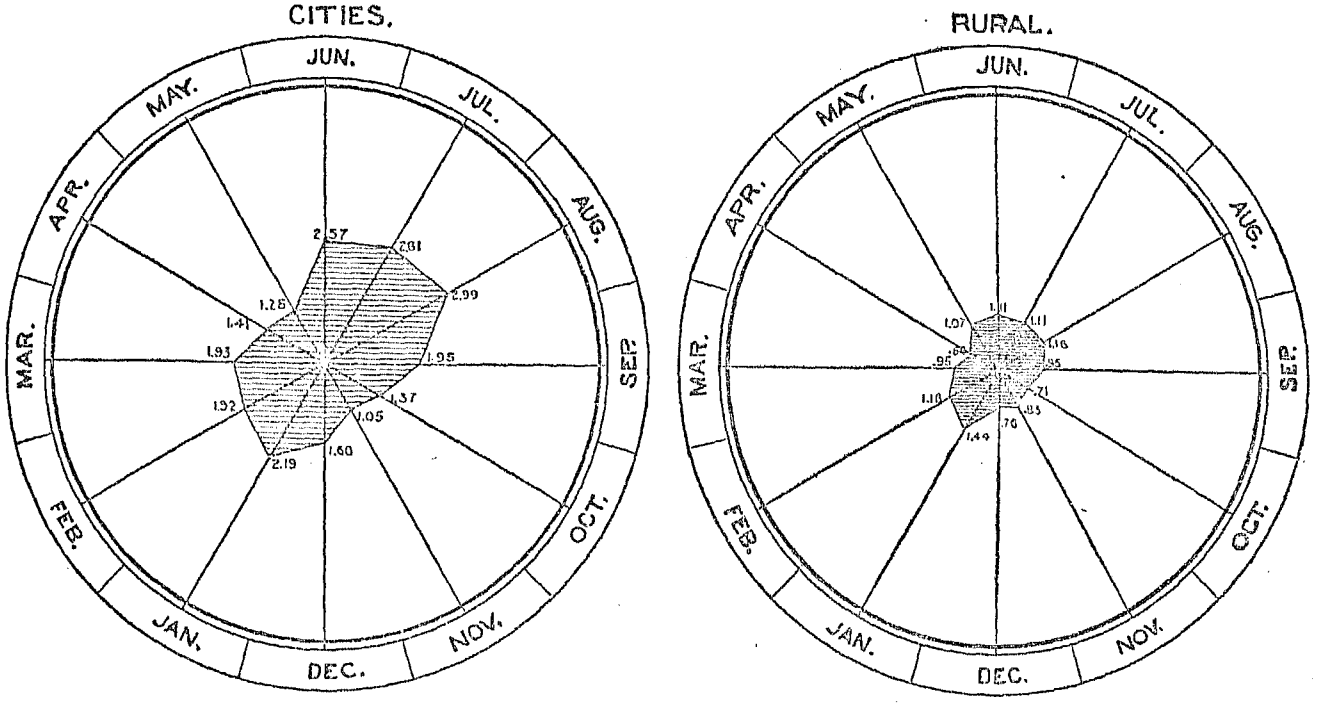


It will be seen from this table and diagram that the greatest proportion of deaths from this cause in the cities occurred in the months of July, August, and January, and the least in October and November, while in the rural districts the greatest proportion of deaths occurred in the months of March and May, and the least in November and December.

The following table shows, for the sum of Grand Groups 1, 2, and 5, which were mainly registration areas, the number of deaths from whooping cough in each month during the census year, and the death rates per 100,000 of population, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			RATE.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.
June	208	161	47	1.08	2.57	1.11
July	223	176	47	2.13	2.81	1.11
August	236	187	49	2.25	2.99	1.16
September	162	122	40	1.55	1.95	0.95
October	116	86	30	1.11	1.37	0.71
November	101	66	35	0.96	1.05	0.83
December	132	100	32	1.26	1.60	0.76
January	198	137	61	1.89	2.19	1.44
February	170	120	50	1.62	1.92	1.18
March	161	121	40	1.54	1.93	0.95
April	115	88	27	1.10	1.41	0.64
May	123	78	45	1.17	1.25	1.07

The death rates in each month, as given in the preceding table, and the relative magnitude of the rates in the cities and the rural districts are shown graphically in the following diagram:

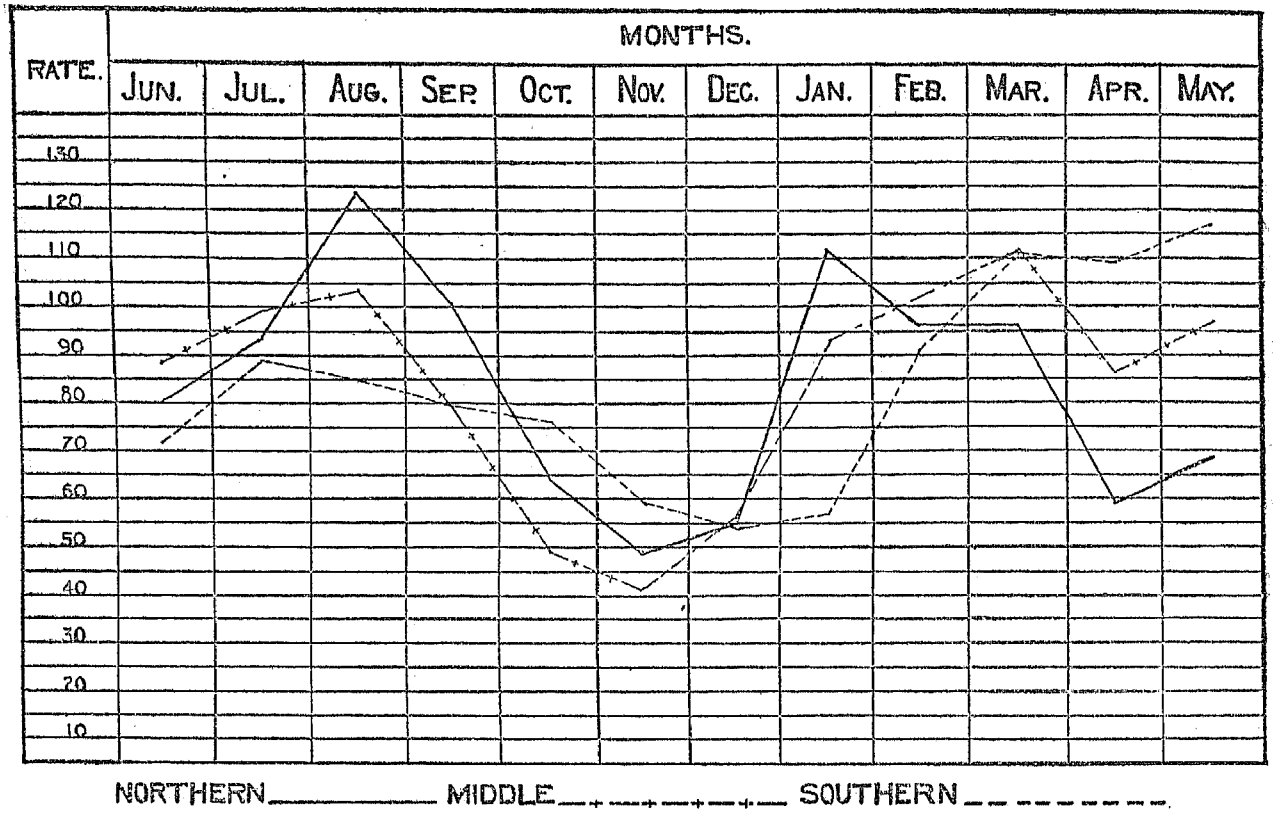


It will be seen from the preceding table and diagram that the highest death rates from whooping cough occurred in the cities in the months of June, July, and August, and the lowest in the months of May, October, and November, while in the rural districts the highest death rates from this cause occurred in January, February, and August, and the lowest in April, October, and December.

The following table shows, for three divisions of grand groups, namely, Northern, Middle, and Southern, the number of deaths from whooping cough under 5 years of age in each month during the census year, and the proportion in each month per 1,000 deaths under 5 years from this disease, of which the month is known:

MONTHS.	NORTHERN REGION. GRAND GROUPS 1, 5, 7, 13, 17, AND 19.		MIDDLE REGION. GRAND GROUPS 2, 6, 8, 10, 15, 16, 18, 20, AND 21.		SOUTHERN REGION. GRAND GROUPS 3, 4, 9, 11, 12, AND 14.	
	Deaths.	Proportion.	Deaths.	Proportion.	Deaths.	Proportion.
June	144	80.45	367	87.74	123	71.97
July	167	93.30	413	98.73	152	88.94
August	220	122.91	429	102.56	146	85.43
September	181	101.12	327	78.17	135	78.99
October	114	63.69	204	48.77	131	76.65
November	86	48.04	177	42.31	101	59.10
December	98	54.75	233	55.70	93	54.42
January	201	112.29	388	92.76	97	56.76
February	171	95.53	414	98.97	156	91.28
March	171	95.53	467	111.64	189	110.59
April	106	59.22	359	85.82	186	108.84
May	131	73.18	405	96.82	200	117.03

The relative proportion of deaths in each month in the several divisions, as given in the preceding table, is shown graphically in the following diagram:



It will be seen from the preceding table and diagram that the greatest proportion of deaths from whooping cough in the Northern region occurred in the months of August and January, in the Southern region in May, and in the Middle region in March and August; while the least proportion of deaths in the Northern and Middle regions occurred in November, and in the Southern region in December.

In considering these figures, it must be borne in mind that death from whooping cough usually results from complications and sequelæ occurring at a late period in the disease, so that it will probably be safe to attribute the deaths reported as due to this disease in any given period to causes contracted about two months prior to this period.

CEREBRO-SPINAL FEVER.

The total number of deaths reported as due to cerebro-spinal fever in the United States during the census year was 3,333, of which 1,753 were of males and 1,580 of females. In the registration area the number of deaths reported as due to this cause was, males, 664; females, 577; total, 1,241; giving a death rate of 6.31 per 100,000 of population.

The following table shows, for the registration area and some of its subdivisions, the death rates from cerebro-spinal fever during the census year in each of four age groups, per 100,000 population of corresponding ages, with distinction of sex:

AREAS.	UNDER 1 YEAR.			UNDER 5 YEARS.			5 TO 15 YEARS.			15 YEARS AND OVER.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
Registration area	79.67	94.06	64.89	37.43	41.70	33.07	6.08	5.98	6.17	1.88	1.86	1.91
Cities	83.01	94.28	71.46	39.56	44.86	34.16	6.57	6.26	6.87	1.85	1.81	1.89
States	72.37	89.77	54.49	35.16	39.23	31.02	5.11	5.39	4.82	1.65	1.80	2.08
Cities	75.61	87.93	63.01	38.43	44.62	32.17	5.51	5.59	5.42	1.92	1.66	2.16
Rural	66.31	93.19	38.53	29.55	30.06	29.03	4.51	5.08	3.91	1.68	2.01	1.96
Cities in nonregistration states	89.48	99.82	78.87	40.54	45.03	35.89	7.49	6.85	8.12	1.78	1.95	1.62
Cities of 100,000 population and upward	87.51	92.96	81.93	42.18	46.76	37.53	6.61	6.30	6.93	1.80	1.87	1.74
Metropolitan district	63.30	67.43	59.06	36.85	42.17	31.48	4.17	3.20	5.15	1.43	1.76	1.11

It will be seen from this table that the highest death rate from this disease occurred in children under 1 year of age, and that the death rate was very low for those over 5 years of age. It is probable that some of the cases in infants reported under this head were really cases of tubercular meningitis. In infants under 1 year of age the death rate from this disease was higher among males (94.06) than among females (64.89). In the registration states it was higher in the cities (75.61) than it was in the rural districts (66.31). This low death rate in the rural districts was mainly due to the very low death rate among the females (38.53), since the death rate among the males (93.19) exceeded that among the males in the cities (87.93). For the total of children under 5 years of age the death rate in the rural districts was lower than in the cities, both for males and females. In persons from 5 to 15 years of age the death rate from this cause was a little higher in the females (6.17) than in the males (5.98).

The following table shows, for each of the registration states, and for their sum, the death rates from cerebro-spinal fever during the census year, per 100,000 of population, with distinction of sex, and of cities and rural districts:

REGISTRATION STATES.	AGGREGATE.			MALES.			FEMALES.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.	Total.	Cities.	Rural.
Total	5.77	6.30	4.98	6.21	6.01	5.19	5.34	5.71	4.76
Connecticut	6.97	5.48	8.03	4.87	3.94	5.52	9.03	6.96	10.52
Delaware	7.12	11.39	4.67	12.85	22.72	7.30	1.21	.....	1.01
District of Columbia	9.11	9.11	.....	9.13	9.13	.....	9.11	9.11	.....
Massachusetts	4.87	3.91	8.01	5.33	4.34	8.49	4.43	3.50	7.55
New Hampshire	8.23	6.33	9.02	6.97	1.02	8.93	9.48	10.28	9.12
New Jersey	6.51	7.04	4.63	8.88	10.36	6.97	4.14	5.56	2.25
New York	5.67	6.96	3.56	5.98	7.38	3.79	5.36	6.56	3.36
Rhode Island	4.05	3.50	4.81	4.76	4.17	5.54	3.38	2.88	4.09
Vermont	3.91	10.60	3.29	2.95	14.76	1.93	4.91	6.78	4.72

It will be seen from this table that the death rate from cerebro-spinal fever was highest in the District of Columbia (9.11) and lowest in Vermont (3.91).

The combined relations of age and race to the death rates from cerebro-spinal fever are indicated in the following table, showing the number of deaths in each of four age groups, and the death rates per 100,000 population of corresponding ages, with distinction of color, and, for the whites, of birthplaces of mothers, the data being derived from a combination of the returns from Boston, Brooklyn, Cincinnati, New York city, the District of Columbia, and the state of New Jersey for the census year:

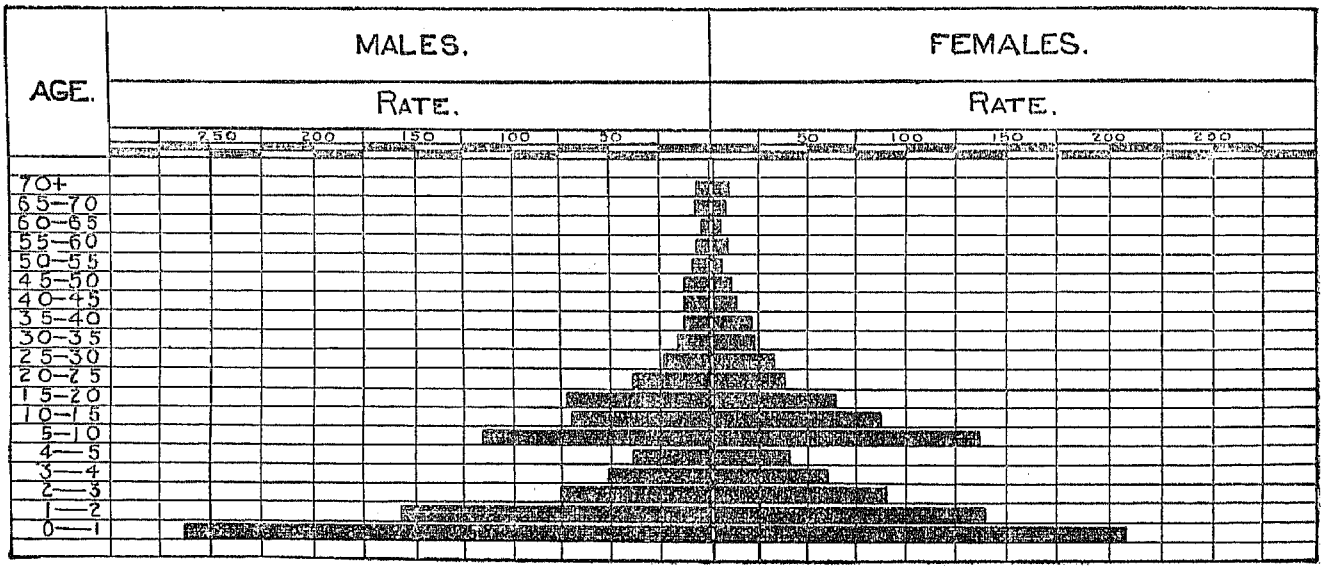
COLOR AND BIRTHPLACES OF MOTHERS.	UNDER 1 YEAR.		UNDER 5 YEARS.		5 TO 15 YEARS.		15 YEARS AND OVER.	
	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.
White	74	70.67	187	38.56	44	5.10	44	1.37
Colored	3	83.08	7	44.04	3	9.26	5	3.80
Birthplaces of mothers (white):								
United States	42	70.78	97	39.27	22	5.38	13	1.23
Ireland	15	105.02	34	51.50	7	4.65	12	1.46
Germany	8	47.82	33	41.13	11	6.83	8	1.10

It will be seen from the preceding table that the death rate from cerebro-spinal fever in infants under 1 year of age was higher among the colored (83.68) than among the whites (70.67); that among the whites it was highest in the children of mothers born in Ireland (105.02), and lowest in the children of mothers born in Germany (47.82).

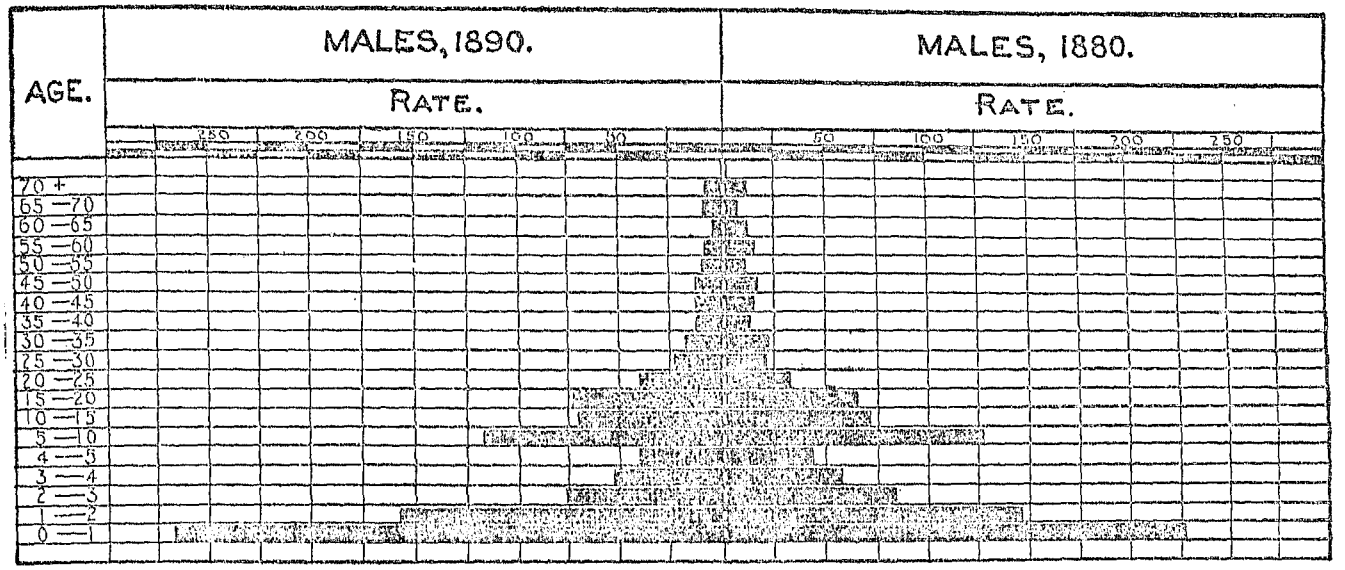
The following table shows the proportion of deaths from cerebro-spinal fever at certain ages and groups of ages, per 1,000 deaths at all ages from this cause in 1880 and 1890, with distinction of sex:

AGES.	1880		1890		AGES.	1880		1890	
	Males.	Females.	Males.	Females.		Males.	Females.	Males.	Females.
Total under 5 years..	561.03	519.91	536.82	535.46	35 to 40 years.....	13.69	28.76	12.61	21.09
Under 1 year.....	226.21	200.59	204.76	208.95	40 to 45 years.....	14.34	12.54	12.61	13.42
1 year.....	147.98	131.27	157.02	139.30	45 to 50 years.....	17.60	16.22	12.61	10.22
2 years.....	84.75	85.55	75.07	89.46	50 to 55 years.....	11.73	10.32	9.17	5.75
3 years.....	58.02	59.73	51.58	59.42	55 to 60 years.....	14.34	7.37	7.45	8.31
4 years.....	44.98	42.77	38.40	38.34	60 to 65 years.....	12.39	11.06	4.01	4.47
5 to 10 years.....	126.47	138.64	116.33	136.10	65 to 70 years.....	6.52	9.59	7.45	7.67
10 to 15 years.....	67.14	86.28	70.49	86.90	70 to 75 years.....	6.52	5.16	3.44	1.92
15 to 20 years.....	63.23	53.10	73.93	67.73	75 to 80 years.....	5.22	2.95	1.15	5.75
20 to 25 years.....	32.59	38.35	38.40	37.70	80 to 85 years.....	.....	0.74	1.15	1.92
25 to 30 years.....	22.16	29.50	24.07	32.59	85 to 90 years.....	0.65	0.74	0.57	.....
30 to 35 years.....	23.47	27.29	17.19	23.00	90 to 95 years.....	.....	1.47	.....	.....
					95 years and over.....	.....	.....	0.57	.....

The comparative proportions of deaths of males and females, in each group, from cerebro-spinal fever during the census year, are shown in the following diagram:



The comparative proportions of deaths of males, in each age group, from cerebro-spinal fever in 1880 and 1890, are shown in the following diagram:



The following table shows, for each grand group, the proportion of deaths from cerebro-spinal fever during the census year, per 1,000 deaths from known causes, with distinction of sex and of rural districts and cities:

GRAND GROUPS.	Total.	RURAL.		CITIES.	
		Males.	Females.	Males.	Females.
1. North Atlantic Coast region	2.23	3.28	3.11	1.42	2.04
2. Middle Atlantic Coast region	2.35	3.20	2.80	2.26	2.25
3. South Atlantic Coast region	2.88	3.74	2.75	2.16	1.69
4. Gulf Coast region	2.53	2.30	2.51	3.22	2.03
5. Northeastern hills and plateaus	3.73	3.12	4.07	3.90	2.85
6. Central Appalachian region	3.45	3.80	3.76	3.00	1.32
7. Region of the Great Northern Lakes	4.31	3.17	3.59	4.94	4.52
8. Interior plateau	2.67	2.76	2.57	2.83	2.49
9. Southern Central Appalachian region	6.01	6.19	6.24	4.91	3.67
10. Ohio River belt	5.96	6.57	6.02	3.90	6.94
11. Southern Interior plateau	2.52	3.24	1.87	.....	2.73
12. South Mississippi River belt	2.98	3.80	3.05	.....	.....
13. North Mississippi River belt	4.53	4.50	4.79	5.33	3.31
14. Southwest Central region	7.76	8.21	7.55	4.32	6.51
15. Central region, plains and prairies	6.32	6.24	6.91	5.12	3.75
16. Prairie region	4.54	4.44	4.50	7.09	6.22
17. Missouri River belt	5.39	4.16	6.54	4.05	7.50
18. Region of the Western plains	5.01	5.41	4.78	2.66	7.55
19. Heavily timbered region of the Northwest	4.33	2.95	5.91	.....	.....
20. Cordilleran region	5.39	4.11	7.72	5.25	.....
21. Pacific Coast region	3.73	3.67	9.01	1.35	3.50

It will be seen from this table that the proportion of deaths from this disease to the deaths from known causes was greatest in the Southwest Central region, the Central region of plains and prairies, and the Southern Central Appalachian region, and was least in the Interior plateaus and the Coast regions.

ENTERIC OR TYPHOID FEVER.

The total number of deaths reported as due to typhoid fever in the United States during the census year was 27,058, of which 15,078 were males and 11,980 were females. In the registration area the number of deaths reported as due to this disease was, males, 5,229; females, 3,868; total, 9,097; giving a death rate per 100,000 of population of 46.27.

In 1890 the death rate from typhoid fever per 100,000 of population was, in England and Wales, 17.9; in Ireland, 18.2; in Scotland, 19.4; in Italy, 65.8; in Belgium, 41.4; in Austria, 47.0; and in Prussia, 20.4.

During the 10 years, 1880 to 1889, the death rates from typhoid fever per 100,000 population were, in England and Wales, 20.5; in Ireland, 16.5; in Scotland, 24.7; in Sweden, 25.9; in Norway, 10.7; in Prussia, 38.3; in Austria, 72.2; in Saxony, 21.4; in Massachusetts, 45.2; in Connecticut, 38.4; in Rhode Island, 49.5; and in New Jersey, 47.2.

The following table shows, for the registration area and some of its subdivisions, the death rates from typhoid fever during the census year, per 100,000 of population, with distinction of color, sex, general nativity, and parental nativity:

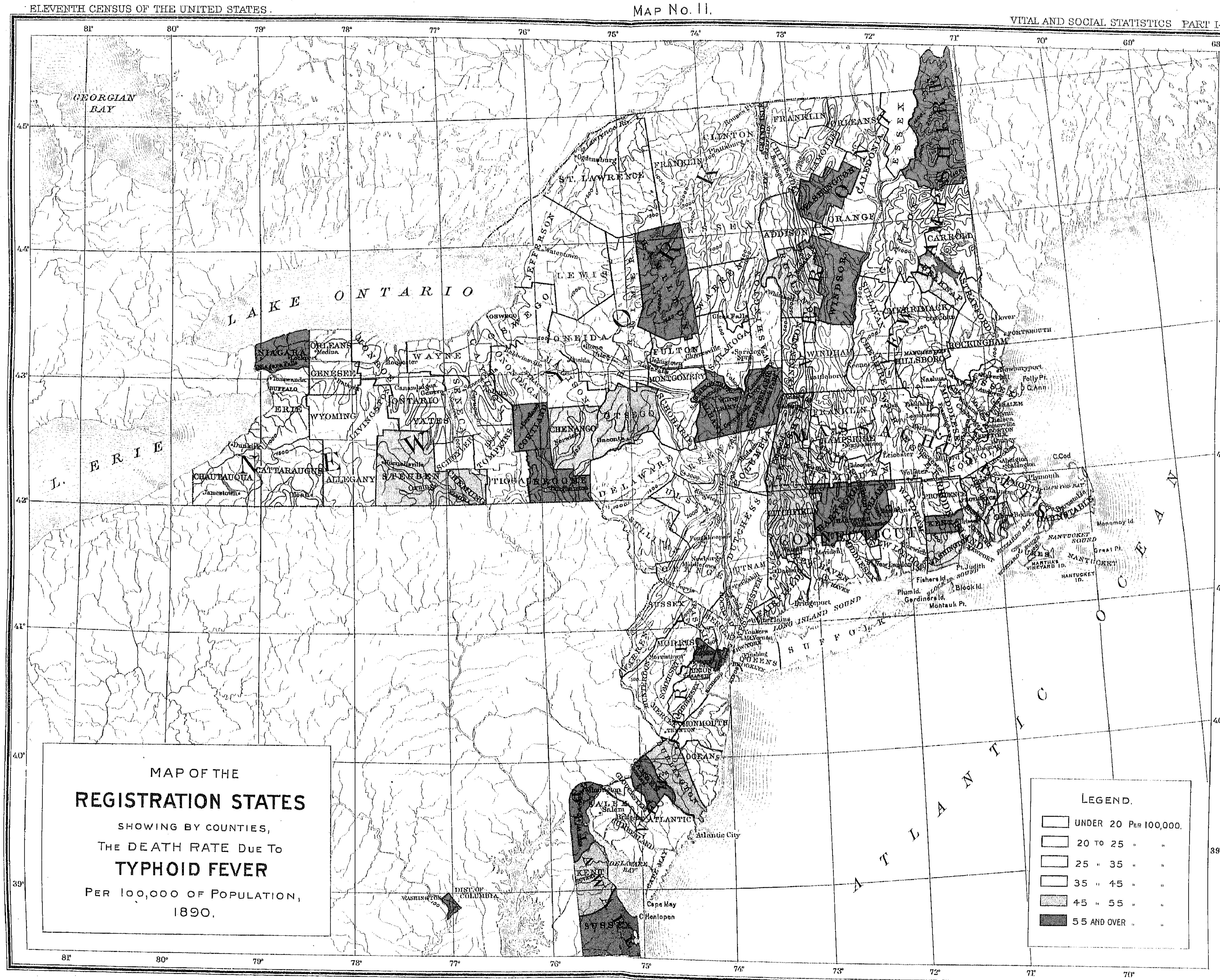
AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
Registration area	46.27	45.20	52.38	38.06	40.40	35.10	36.76	58.43	67.23	72.57	62.05
Cities	50.96	49.78	58.11	41.54	44.30	40.02	37.59	62.40	70.01	75.59	64.65
States	35.96	35.22	40.46	30.10	32.52	32.00	32.99	43.03	67.25	68.81	65.78
Cities	38.97	37.85	44.09	31.90	34.13	35.00	32.80	45.62	80.02	81.37	78.81
Rural	31.35	31.24	35.13	27.28	30.57	29.72	33.51	34.87	37.74	42.31	32.82
Cities in nonregistration states	62.03	61.53	71.45	51.38	53.73	50.87	48.65	81.38	67.23	74.05	60.54
Cities of 100,000 population and upward	53.25	52.66	.....	.....	46.09	42.83	33.51	65.98	64.93	.....	.....
Metropolitan district, 6 years	29.11	29.14	34.03	24.37	26.15	31.24	22.84	34.16	26.94	29.74	24.25

It will be seen from this table that the death rate from typhoid fever was higher among the colored (67.23) than among the whites (45.20); that it was higher among males (whites, 52.38; colored, 72.57) than among females (whites, 38.06; colored, 62.05), and that for the whites it was higher among the foreign born (58.43) than among the native (40.40), which is probably owing mainly to the difference of age distribution of the two groups of population. Among the native born whites having one or both parents foreign born the death rate from this cause (36.76) was slightly higher than it was among those having both parents native born (35.16). In the registration states the death rate from this disease was higher in the cities (38.97) than it was in the rural districts (31.35), and it was decidedly higher in the cities of nonregistration states (62.03).

The following table shows, for each of the registration states, and for their sum, the death rates from typhoid fever during the census year, per 100,000 of population, with distinction of sex, of color, and of cities of rural districts:

REGISTRATION STATES.	AGGREGATE.			MALES.			FEMALES.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.	Total.	Cities.	Rural.
Total	35.96	38.97	31.35	41.10	45.04	35.26	30.93	33.18	27.38
Connecticut	44.35	42.53	45.65	48.44	49.25	47.87	40.35	36.00	43.45
Delaware	60.54	70.00	55.11	77.13	94.11	67.57	43.42	45.73	42.06
District of Columbia	86.81	86.81	.....	93.08	93.08	.....	81.12	81.12	.....
Massachusetts	36.94	38.49	31.86	44.77	47.31	36.66	29.53	30.24	27.17
New Hampshire	36.02	27.15	40.97	40.74	32.62	43.88	33.16	22.27	38.00
New Jersey	47.34	63.75	25.87	51.98	66.62	32.06	42.81	60.93	18.68
New York	28.59	30.20	26.00	33.16	35.09	30.13	24.10	25.50	21.76
Rhode Island	43.41	37.49	51.57	49.99	54.24	44.35	37.19	22.08	58.67
Vermont	37.30	60.08	35.18	34.84	29.53	35.31	39.85	88.14	35.05

The comparative death rates due to typhoid fever in the different counties of the registration states, per 100,000 of population, are shown in map No. 11.


MAP OF THE
REGISTRATION STATES
SHOWING BY COUNTIES,
THE DEATH RATE DUE TO
TYPHOID FEVER
PER 100,000 OF POPULATION,
1890.
LEGEND.
UNDER 20 PER 100,000.
20 TO 25 " "
25 " 35 " "
35 " 45 " "
45 " 55 " "
55 AND OVER " "
LAKE ONTARIO
L. ERIE
GEORGIAN BAY
ATLANTIC OCEAN
LONG ISLAND SOUND
NANTUCKET SOUND
DELAWARE BAY
DIST. OF COLUMBIA
WASHINGTON
NIAGARA
ORLEANS
GENESEE
ERIE
BUFFALO
WYOMING
CHAUTAUQUA
CATTARAUGUS
ALLEGANY
STEUBEN
CHEMUNG
ONTARIO
YATES
WAYNE
SENECA
CAYUGA
TOMPKINS
SCHUYLER
TIOGA
BROOME
CORTLAND
CHENANGO
OTSEGO
DELAWARE
ONONDAGA
OSWEGO
ONEIDA
LEWIS
JEFFERSON
ST. LAWRENCE
FRANKLIN
CLINTON
ESSEX
FULTON
MONTGOMERY
SCHOHARIE
SULLIVAN
ULSTER
DUTCHESS
COLUMBIA
PUTNAM
WESTCHESTER
QUEENS
SUFFOLK
SUSSEX
MORRIS
WARREN
HUNTERDON
SOMERSET
UNION
MIDDLESEX
MERCER
MONMOUTH
TRENTON
OCEAN
ATLANTIC
SALEM
CUMBERLAND
KENT
Atlantic City
Cape May
C. Henlopen
ORANGE
ADDISON
WINDSOR
WINDHAM
CALEDONIA
CARROLL
MERRIMACK
ROCKINGHAM
HILLSBORO
STRAFFORD
FRANKLIN
HAMPSHIRE
MIDDLESEX
PROVIDENCE
PLYMOUTH
BARNSTABLE
Bridgeport
New Haven
C. Cod
Monomoy Id.
Block Id.
Montauk Pt.
Fishers Id.
Plum Id.
Gardiners Id.
Pt. Judith
Great Pt.
NANTUCKET ID.
MARTHA'S VINEYARD ID.

It will be seen from the preceding table that the death rate from typhoid fever was highest in the District of Columbia (86.81), and lowest in New York (28.59). In the rural districts it was highest in Delaware (55.11), and lowest in New Jersey (25.87). It was higher in the cities (38.97) than in the rural districts (31.35) in the aggregate, but in Connecticut, New Hampshire, and Rhode Island it was higher in the rural districts than in the cities. It was higher, for the aggregate, among males (41.10) than among females (30.93); but in Vermont it was higher among females (39.85) than it was among males (34.84). In the aggregate it was much higher among the colored (67.25) than it was among the whites (35.22), the highest death rate among the colored being in the District of Columbia (112.29), and the lowest in New York (27.06). No deaths were reported among the colored from this disease in New Hampshire and Vermont during the census year.

Of 5,716 deaths from typhoid fever in whites in the registration area during the census year, 1,858 were children of mothers born in the United States, 1,050 children of mothers born in Ireland, 752 children of mothers born in Germany, 302 children of mothers born in England and Wales, 301 children of mothers born in Canada, 178 children of mothers born in Scandinavia, 56 children of mothers born in Scotland, 46 children of mothers born in Italy, 23 children of mothers born in Bohemia, 19 children of mothers born in France, and 15 children of mothers born in Hungary.

The following table shows, for the registration area and some of its subdivisions, the death rates from typhoid fever among the whites during the census year, per 100,000 of white population, with distinction of birthplaces of mothers:

AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
Registration area	26.79	43.24	39.48	27.47	23.18	35.38	44.74	73.02	46.87	50.50	32.84	30.76
Cities	29.71	45.02	41.92	31.53	21.48	36.86	47.77	75.28	46.58	58.58	38.35	31.46
States	26.11	39.03	37.50	27.13	24.31	29.29	45.00	65.87	35.71	6.43	26.24	23.55
Cities	29.55	40.23	39.81	32.33	22.07	30.37	50.28	68.28	33.17	7.09	31.43	23.20
Rural	23.27	36.57	36.20	14.47	20.73	24.60	38.04	60.18	48.83	.....	.....	25.11
Cities in nonregistration states	30.05	60.45	52.39	20.00	20.50	40.26	35.28	80.29	88.18	87.45	77.20	49.95
Cities of 100,000 population and upward	31.44	44.30	44.37	37.95	17.92	37.47	48.38	68.87	40.80	62.07	35.87	29.38

It will be seen from this table that the death rate from typhoid fever in the registration area was highest among those whose mothers were born in Scandinavia, Bohemia, Hungary, and Canada, but the absolute numbers of deaths from this disease in these groups was not sufficiently great to warrant any definite conclusions from this fact. It was higher among children of mothers born in Ireland (39.48) than in children of mothers born in Germany (35.38), or in children of mothers born in the United States (26.79).

The following table shows, for the registration area and some of its subdivisions, the death rates from typhoid fever during the census year in each of 5 age groups, per 100,000 population of corresponding ages, with distinction of sex:

AREAS.	UNDER 15 YEARS.			15 TO 25 YEARS.			25 TO 35 YEARS.			35 TO 45 YEARS.			45 YEARS AND OVER.		
	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.
Registration area	26.78	26.37	27.19	78.69	94.26	64.39	60.44	74.85	45.48	39.08	46.92	30.80	32.11	35.73	28.60
Cities	29.96	29.95	29.97	85.45	103.30	69.45	65.27	80.82	49.06	43.46	52.55	33.77	34.00	37.99	30.31
States	19.52	18.49	20.56	62.14	74.20	50.89	46.40	57.34	35.58	30.69	36.31	25.03	27.43	30.31	24.70
Cities	21.73	21.09	22.38	66.64	80.96	54.09	49.23	60.97	37.77	34.44	41.54	27.35	26.94	29.62	24.50
Rural	16.06	14.51	17.66	54.44	63.71	45.01	41.04	50.60	31.33	24.64	27.98	21.24	27.96	31.03	24.92
Cities in nonregistration states	37.10	37.63	36.57	102.64	123.52	83.72	70.66	97.57	59.85	52.06	62.41	40.31	41.59	46.39	36.76
Cities of 100,000 population and upward.	28.68	28.85	28.51	91.77	111.28	74.39	69.77	85.46	52.94	45.68	55.63	34.74	34.61	38.80	30.53
Metropolitan district	15.40	15.14	15.65	50.17	63.91	38.24	38.58	44.73	32.31	29.02	35.57	22.11	25.44	27.74	23.22

It will be seen from this table that the death rate from typhoid fever was highest among persons from 15 to 25 years of age (78.69), and that in this age group it was higher among males (94.26) than among females (64.39). In the registration states it was higher in the cities (66.64) than it was in the rural districts (54.44).

The combined relations of age and race to the death rates from typhoid fever are indicated in the following table showing the number of deaths in each of five age groups, and the death rates per 100,000 population of corresponding ages, with distinction of color, and for the whites, of birthplaces of mothers, the data being derived from a combination of the returns from Boston, Brooklyn, Cincinnati, New York city, the District of Columbia, and the state of New Jersey, for the census year:

COLOR AND BIRTHPLACES OF MOTHERS.	UNDER 15 YEARS.		15 TO 25 YEARS.		25 TO 35 YEARS.		35 TO 45 YEARS.		45 YEARS AND OVER.	
	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.	Deaths.	Rate.
White	257	19.06	564	59.41	337	45.14	191	32.50	212	26.22
Colored	32	66.54	52	127.86	30	84.52	9	33.31	17	59.86
Birthplaces of mothers (white):										
United States	134	20.44	193	58.90	97	38.77	51	27.00	64	21.82
England and Wales	13	25.12	22	55.83	24	56.02	15	44.90	12	25.59
Ireland	34	15.69	142	57.94	106	46.62	55	37.15	54	26.67
Scotland	4	24.85	7	58.38	6	40.78	2	18.23	4	27.84
Germany	46	19.07	107	50.80	72	35.24	42	31.45	50	27.62
Canada	.....	.....	10	61.46	14	93.22	2	23.59	3	37.80
Scandinavia	2	13.94	14	130.00	9	62.83	4	52.21	2	35.10
Italy	5	15.70	13	84.82	6	28.74	.....	.....	.....	.....

This table indicates that in the age group 15 to 25 years the death rate from typhoid fever was more than twice as high among the colored (127.86) as it was among the whites (59.41); and that among the whites it was highest among the children of mothers born in Scandinavia (130.00) and in Italy (84.82), and lowest among the children of mothers born in Germany (50.80) and in England and Wales (55.83).

In the age group from 25 to 35 years it was higher among the colored (84.52) than it was among the whites (45.14). Among the whites it was highest among the children of mothers born in Canada (93.22) and in Scandinavia (62.83), and lowest among the children of mothers born in Italy (28.74) and in Germany (35.24).

In the age group from 35 to 45 years it was but little higher among the colored (33.31) than among the whites (32.50). Among the whites it was highest among the children of mothers born in Scandinavia (52.21) and in England and Wales (44.90), and, excluding Italy, in which there was only 1 death from this disease in this age group, it was lowest among the children of mothers born in Scotland (18.23) and in Canada (23.59).

In the age group 45 years of age and over the death rate from this disease was more than twice as high among the colored (59.86) as among the whites (26.22), and among the whites it was higher among the children of mothers born in Germany (27.62) and in Ireland (26.67) than it was among the children of mothers born in the United States (21.82).

For further details with regard to death rates from typhoid fever in large cities see Part II of this report, page 78.

Out of 100,000 deaths from all causes in the United States during the census year 3,090 are reported as due to typhoid fever, the corresponding figures in 1880 having been 3,019, and in 1870, 4,507; in England and Wales the corresponding proportion for 1890 was 915.3, and in 1880, 1,272.

In each 1,000 deaths from known causes of persons between 15 and 45 years of age the number of deaths in the United States during the census year was, for whites, 80.46; for colored, 52.36; for Chinese, 23.02; and for Indians, 17.85. In the registration area the corresponding figure was 65.00.

The following table shows, for the United States, and for the registration area and some of its subdivisions, the proportion of deaths from typhoid fever during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of color, sex, general nativity, and parental nativity:

AREAS.	Aggregate.	WHITE.							COLORED.		
		Total.	Males.	Females.	Native born.			Foreign born.	Total.	Males.	Females.
					Total.	Both parents native.	One or both parents foreign.				
The United States	33.52	33.42	35.37	31.21	33.72	37.83	24.94	32.24	34.24	35.38	33.07
Registration area	23.85	23.89	26.17	21.34	21.47	20.61	17.28	30.44	23.34	23.93	22.71
Cities	24.54	24.64	26.94	22.04	21.70	21.26	16.21	31.66	23.44	23.93	22.91
States	18.67	18.46	20.20	16.59	17.23	18.65	15.21	21.88	24.80	24.08	25.56
Cities	17.70	17.39	18.97	15.68	15.35	17.60	13.34	21.94	25.55	24.10	27.06
Rural	20.84	20.82	22.94	18.58	20.60	19.70	24.24	21.62	21.68	24.00	19.12
Cities in nonregistration states	31.63	32.97	35.75	29.67	28.68	30.78	24.36	44.02	22.81	23.88	21.65
Cities of 100,000 population and upward	24.74	25.01	.....	.....	21.40	19.72	14.01	32.87	21.16	.....	.....
Metropolitan district, 6 years	11.67	11.71	12.76	10.52	9.75	11.47	8.60	15.79	9.98	10.19	9.75

This table indicates that the proportion of deaths from typhoid fever was greater in the United States as a whole (33.52) than it was in the registration area (23.85), and that in the registration states it was greater in the rural districts (20.84) than it was in the cities (17.70).

The following table shows, for the United States and for the registration area and some of its subdivisions, the proportion of deaths from typhoid fever among the whites during the census year, per 1,000 deaths from known causes, excluding stillbirths, with distinction of birthplaces of mothers:

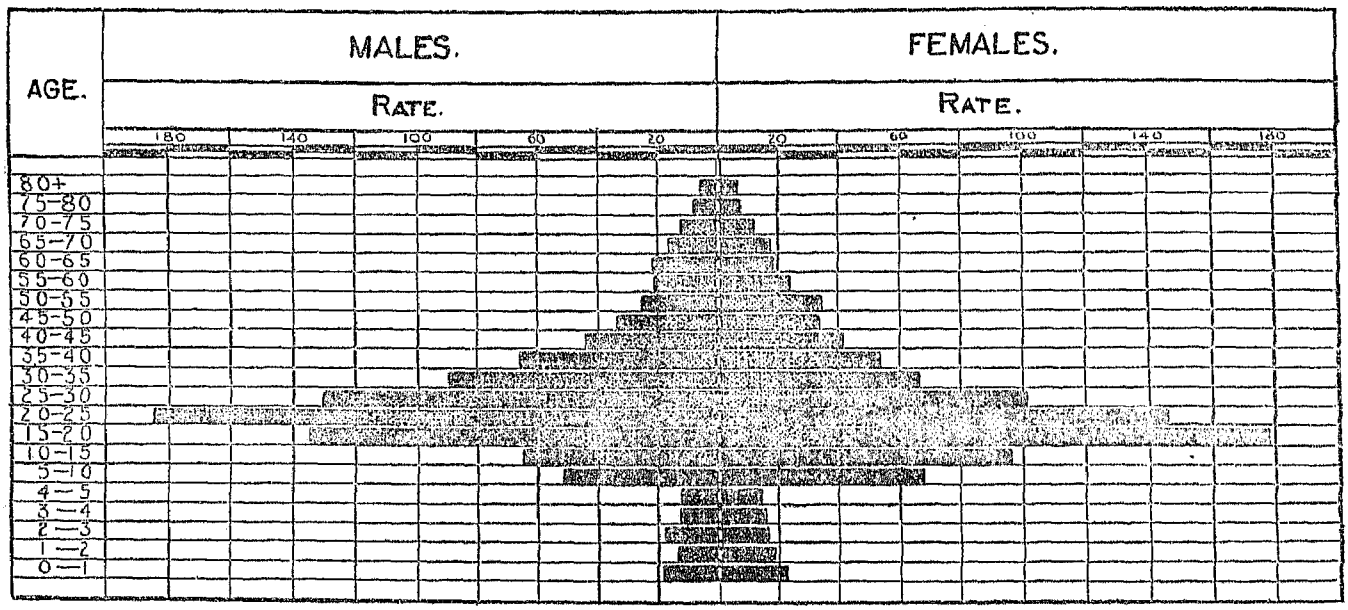
AREAS.	United States.	England and Wales.	Ireland.	Scotland.	France.	Germany.	Canada.	Scandinavia.	Hungary.	Bohemia.	Italy.	Other foreign countries.
The United States	37.90	31.04	20.18	24.58	26.32	28.61	32.01	50.32	31.57	20.68	15.31	24.28
Registration area	19.64	26.28	18.75	17.00	14.25	20.77	27.77	46.82	20.98	21.00	12.04	15.77
Cities	19.04	26.30	18.33	18.53	12.66	20.86	26.19	46.61	19.40	21.32	13.67	15.28
States	18.09	23.15	17.28	15.91	14.40	16.35	27.99	38.52	15.99	2.14	9.87	13.65
Cities	16.19	22.01	16.52	17.44	12.08	15.83	26.27	35.80	13.51	2.22	10.49	12.64
Rural	20.63	26.24	21.30	10.77	22.03	19.84	32.35	48.35	44.44	.....	.....	23.30
Cities in nonregistration states	30.55	40.89	31.21	23.66	13.85	29.92	25.59	57.09	39.47	35.03	44.59	19.58
Cities of 100,000 population and upward.	16.68	24.75	17.25	20.05	9.82	20.18	23.09	50.91	17.83	21.82	12.23	13.53

This table indicates that in the United States as a whole, as well as in the registration area, the greatest proportion of deaths from typhoid fever among the whites occurred in children of mothers born in Scandinavia (50.32), and that it was greater in children of mothers born in Germany (28.61) than in children of mothers born in Ireland (20.18), while the true death rate, as shown in a preceding table, was greater in the children of mothers born in Ireland than in those of mothers born in Germany.

The following table shows the proportion of deaths from typhoid fever at certain ages and groups of ages per 1,000 deaths at all ages from this disease in 1880 and in 1890, with distinction of sex:

AGES.	1880		1890		AGES.	1880		1890	
	Males.	Females.	Males.	Females.		Males.	Females.	Males.	Females.
Total under 5 years..	117.20	119.72	79.23	87.74	35 to 40 years.....	39.55	48.00	66.36	54.42
Under 1 year.....	29.08	27.63	19.51	22.38	40 to 45 years.....	34.19	37.72	43.70	41.64
1 year.....	27.73	28.18	14.68	19.01	45 to 50 years.....	32.06	34.01	34.59	32.55
2 years.....	23.73	28.91	18.50	17.16	50 to 55 years.....	32.74	31.00	25.27	34.07
3 years.....	21.09	17.91	13.74	14.80	55 to 60 years.....	30.28	23.16	21.72	23.55
4 years.....	14.97	17.09	12.80	14.36	60 to 65 years.....	33.00	27.45	21.99	19.01
5 to 10 years.....	74.59	86.54	51.48	68.64	65 to 70 years.....	26.38	21.00	17.70	18.84
10 to 15 years.....	81.90	104.35	61.05	96.82	70 to 75 years.....	20.07	20.00	13.81	13.12
15 to 20 years.....	131.23	160.89	135.40	178.42	75 to 80 years.....	14.80	14.18	9.52	8.75
20 to 25 years.....	157.59	125.53	185.27	146.95	80 to 85 years.....	6.21	6.54	4.16	4.71
25 to 30 years.....	99.42	78.00	131.44	101.19	85 to 90 years.....	2.21	2.91	2.08	1.93
30 to 35 years.....	65.40	50.54	90.62	67.04	90 to 95 years.....	0.34	0.55	0.60	0.34
					95 years and over.....	0.34	0.00	0.13	0.25

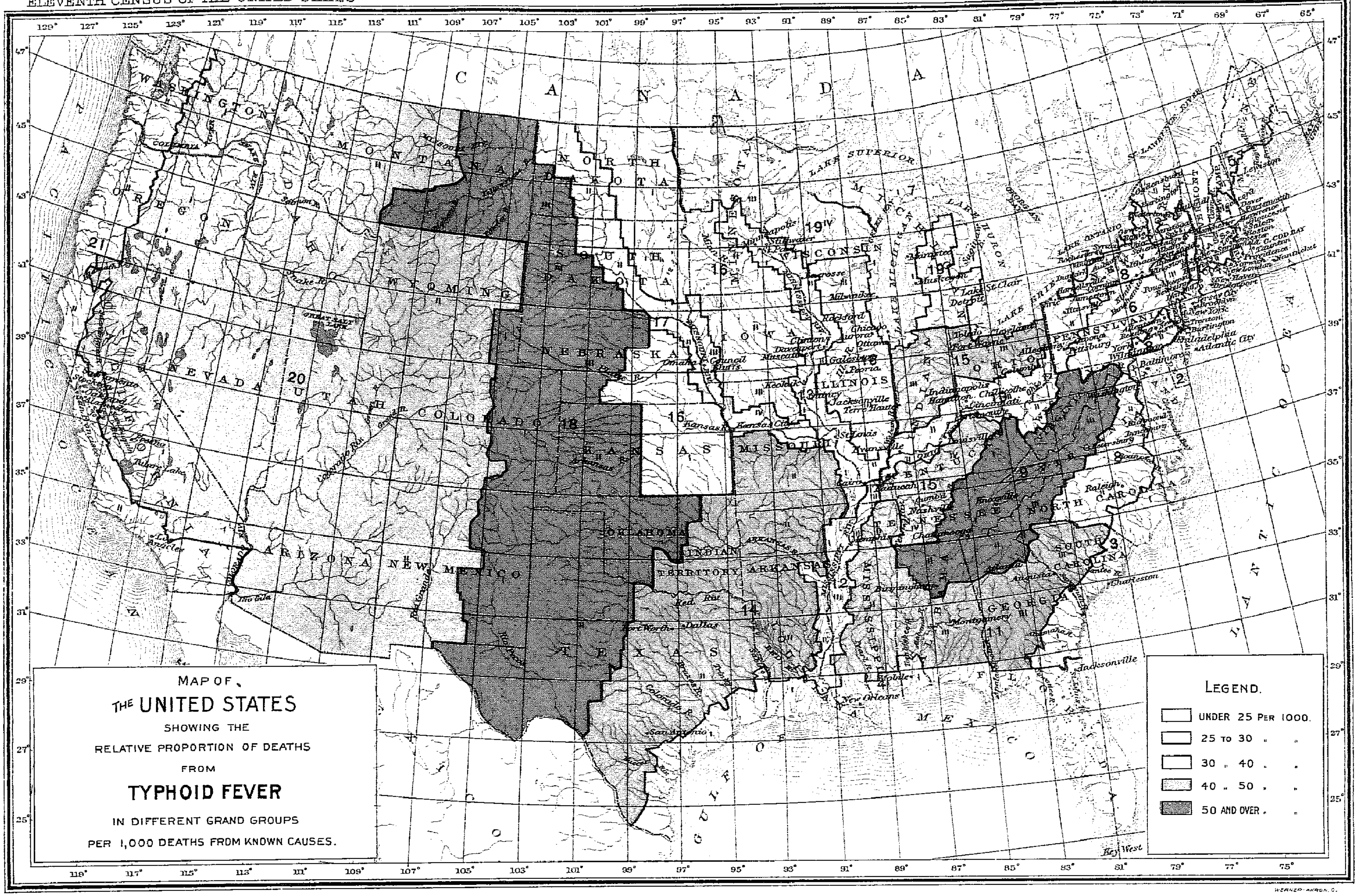
The comparative proportions of deaths of males and females in each age group from typhoid fever during the census year are shown in the following diagram:



It will be seen from the preceding table and diagram that the greatest proportion of deaths from typhoid fever occurred in males between the ages of 20 and 25, and in females between the ages of 15 and 20. Fifty-four and twenty-seven hundredths per cent of all the deaths in males and 49.36 per cent of females in 1890 were of persons from 15 to 35 years of age. In each of the five first years of life the proportion of deaths from this cause was nearly the same. Above the age of 45 it rapidly diminished.

The average age of those dying from typhoid fever in the United States in 1890 was 27.31 years. In the registration states it was 29.06 years. In 1880, in the United States, it was 27 years.

MAP No. 12


MAP OF
THE UNITED STATES
SHOWING THE
RELATIVE PROPORTION OF DEATHS
FROM
TYPHOID FEVER
IN DIFFERENT GRAND GROUPS
PER 1,000 DEATHS FROM KNOWN CAUSES.
LEGEND.
UNDER 25 PER 1000.
25 TO 30
30 40
40 50
50 AND OVER
C A N A D A
GULF OF MEXICO
WASHINGTON
OREGON
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
NEVADA
UTAH
COLORADO
NEBRASKA
KANSAS
OKLAHOMA
INDIAN TERRITORY
ARIZONA
NEW MEXICO
TEXAS
IOWA
WISCONSIN
ILLINOIS
MISSOURI
ARKANSAS
OHIO
PENNSYLVANIA
NORTH CAROLINA
SOUTH CAROLINA
GEORGIA
LAKE SUPERIOR
LAKE HURON
LAKE ERIE
LAKE ONTARIO
Key West
Jacksonville
New Orleans
Mobile
Charleston
Montgomery
Augusta
Chattanooga
Nashville
Paducah
Cairo
St. Louis
Kansas City
Omaha
Council Bluffs
Peoria
Chicago
Milwaukee
Detroit
Toledo
Cleveland
Pittsburg
Philadelphia
Baltimore
New York
Brooklyn
Boston
Atlantic City
Raleigh
Indianapolis
Cincinnati
Louisville
Evansville
Dallas
Fort Worth
San Antonio
Los Angeles
Tulare Lake
Great Salt Lake
21
20
18
16
17
19
15
14
12
11
9
8
6
5
3
2

The following table shows for each grand group the proportion of deaths from typhoid fever during the census year, per 1,000 deaths from known causes, with distinction of sex and color, of rural districts and cities, and of children of mothers born in Ireland and in Germany:

GRAND GROUPS.	Total.	RURAL.		CITIES.		White.	Colored.	MOTHERS BORN IN—	
		Males.	Females.	Males.	Females.			Ireland.	Germany.
1. North Atlantic Coast region	19.30	22.06	21.26	21.41	14.67	19.27	21.24	18.93	17.79
2. Middle Atlantic Coast region	16.81	30.29	20.25	15.30	14.20	15.96	24.70	12.82	14.13
3. South Atlantic Coast region	33.90	38.81	38.88	23.71	18.00	46.18	26.08	25.77	42.37
4. Gulf Coast region	25.31	39.98	41.07	10.30	6.09	24.88	25.95	21.98	26.04
5. Northeastern hills and plateaus	25.37	30.71	25.16	22.36	18.12	25.32	34.09	24.95	20.15
6. Central Appalachian region	28.59	33.40	31.88	14.73	10.36	28.82	18.52	21.26	30.59
7. Region of the Great Northern Lakes	27.60	30.37	26.38	28.44	25.66	27.77	14.67	21.33	24.14
8. Interior plateau	35.74	39.05	34.09	37.31	32.18	36.06	33.48	33.65	42.72
9. Southern Central Appalachian region	55.24	62.58	50.41	43.73	43.48	57.19	48.48	40.01	45.69
10. Ohio River belt	35.73	41.57	40.83	24.85	26.41	36.07	32.04	20.09	33.86
11. Southern Interior plateau	47.55	47.05	49.57	26.36	23.19	54.80	41.69	23.62	23.53
12. South Mississippi River belt	28.40	28.48	30.72	23.41	19.08	35.43	23.94	25.00	72.73
13. North Mississippi River belt	27.02	29.82	29.54	26.67	20.76	27.56	17.73	20.54	37.00
14. Southwest Central region	44.08	44.93	43.63	45.39	31.40	46.02	35.70	32.07	40.65
15. Central region, plains and prairies	45.36	49.33	44.39	35.84	31.06	46.43	37.16	27.42	41.86
16. Prairie region	30.84	32.57	29.86	22.14	11.40	30.90	28.27	18.14	32.62
17. Missouri River belt	34.05	40.90	36.95	32.37	25.71	35.66	22.36	26.62	36.36
18. Region of the Western plains	56.47	49.48	37.28	113.03	58.55	58.60	17.89	38.25	50.31
19. Heavily timbered region of the Northwest	32.77	34.78	30.48	.....	.....	33.24	13.37	24.10	28.85
20. Cordilleran region	45.99	45.94	46.02	34.12	40.33	48.11	20.41	37.13	45.98
21. Pacific Coast region	34.20	47.19	48.18	25.21	22.37	35.93	11.10	20.42	41.03

The geographical distribution of deaths from typhoid fever in the several grand groups is shown by map No. 12.

It will be seen from this table and map that in the rural districts the proportion of deaths caused by typhoid fever was greatest in the Southern Central Appalachian region, the Western plains, the Central region of plains and prairies, and the Pacific Coast region, and was least in the North Atlantic Coast region, in the North Mississippi River belt, and in the region of the Great Northern Lakes.

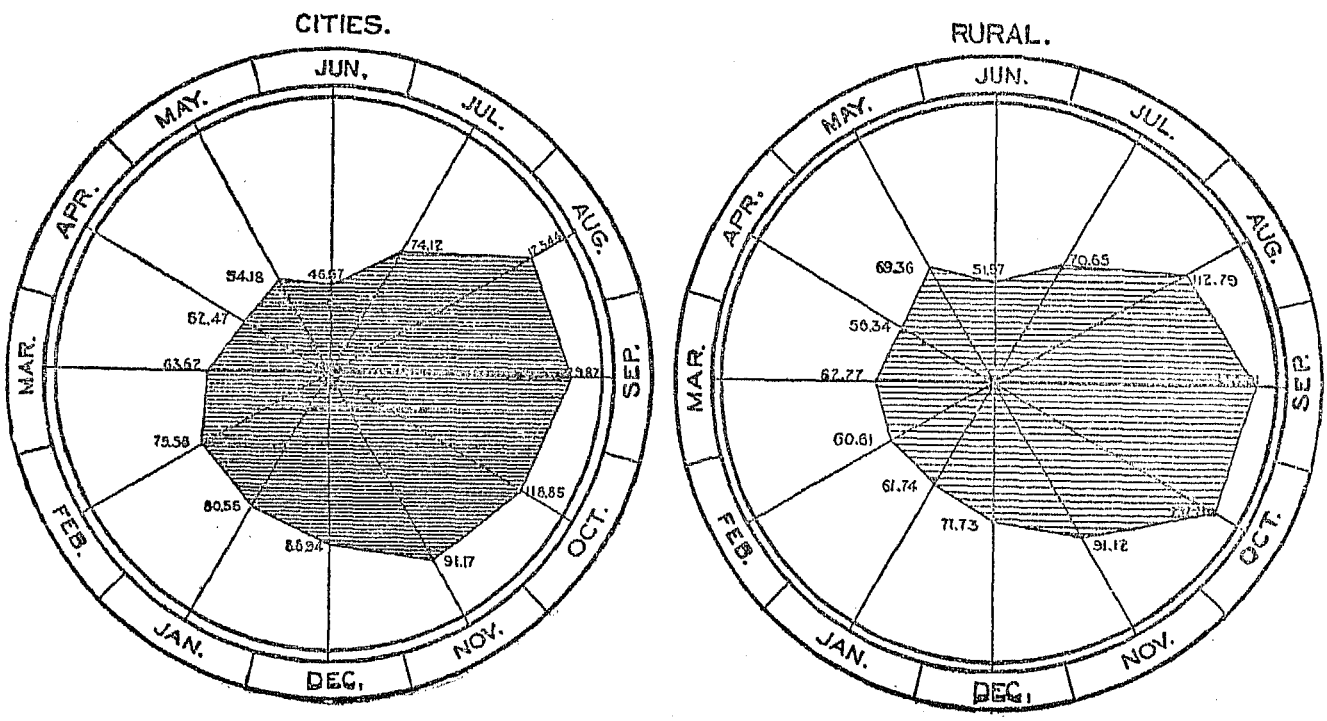
Taking rural districts and cities and both sexes together for the whites, the proportion of deaths from typhoid fever per 1,000 deaths from known causes was greatest in the region of the Western plains (58.60), in the Southern Central Appalachian region (57.19), and the Southern Interior plateau (54.80), and was least in the Middle Atlantic Coast region (15.96), the North Atlantic Coast region (19.27), and the Gulf Coast region (24.88). Among the colored it was greatest in the Southern Central Appalachian region (48.48), the Southern Interior plateau (41.69), the Central region of plains and prairies (37.16), and was least in the region of the Great Lakes (14.67), in the Heavily timbered region of the Northwest (13.37), and in the Pacific Coast region (11.10).

The geographical distribution of deaths from typhoid fever by state groups, per 1,000 deaths from known causes in each group, is shown in map No. 13.

The following table shows, for the United States, the number of deaths from typhoid fever in each month during the census year, and the proportion in each month per 1,000 deaths from this cause, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			PROPORTION IN EACH MONTH PER 1,000 TOTAL DEATHS.		
	United States.	Cities.	Rural.	United States.	Cities.	Rural.
Total	27,058	7,623	19,435	.....	.....	.....
June	1,365	355	1,010	50.45	46.57	51.97
July	1,938	565	1,373	71.62	74.12	70.65
August	3,133	941	2,192	115.79	123.44	112.79
September	3,614	990	2,624	133.56	129.87	135.01
October	3,489	906	2,583	128.95	118.85	132.90
November	2,466	695	1,771	91.14	91.17	91.12
December	2,072	678	1,394	76.58	88.94	71.73
January	1,814	614	1,200	67.04	80.55	61.74
February	1,754	576	1,178	64.82	75.56	60.61
March	1,705	485	1,220	63.01	63.62	62.77
April	1,495	400	1,095	55.25	52.47	56.34
May	1,761	413	1,348	65.08	54.18	69.36
Unknown	452	5	447	16.70	.66	23.00

The relative proportion of deaths from typhoid fever in each month in the cities and in the rural districts, and the variation in the proportion of deaths in the two areas, as indicated in the table above, are shown in the following diagram:

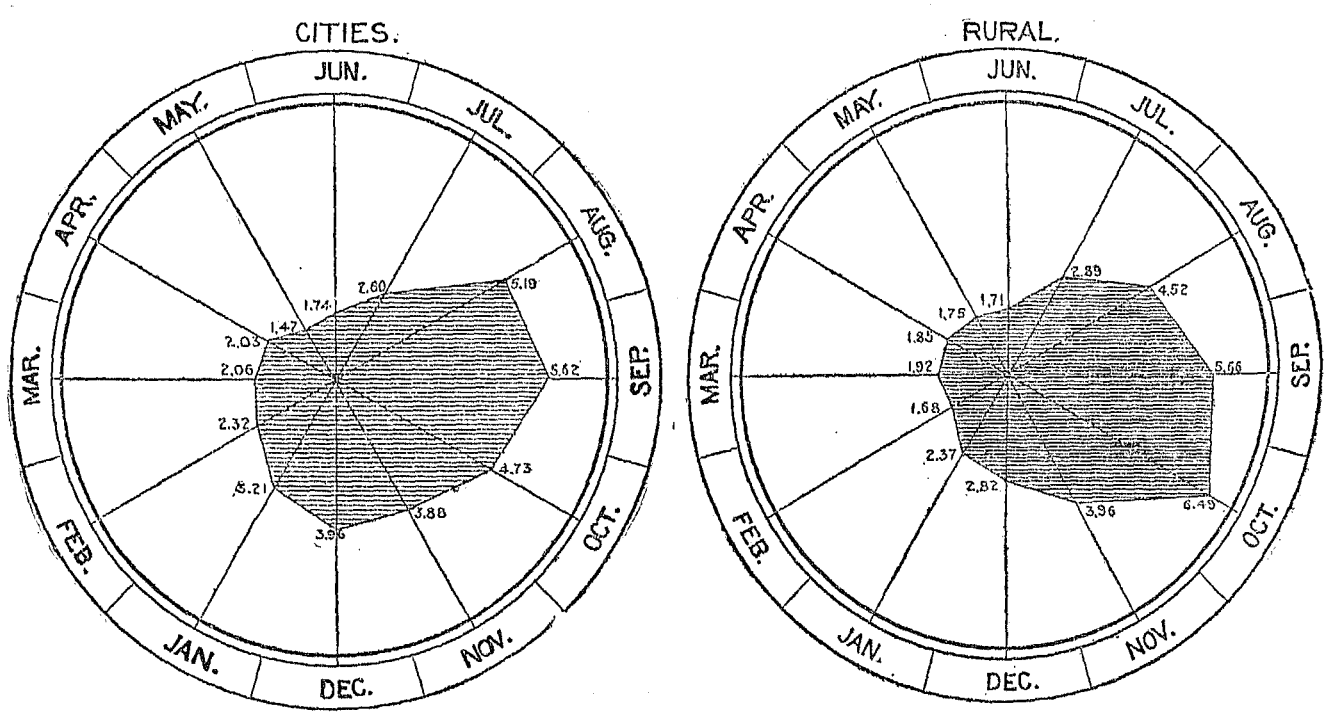


It will be seen from the preceding table and diagram that the greatest proportion of deaths from typhoid fever occurred in the months of August, September, and October.

The following table shows, for the sum of Grand Groups 1, 2, and 5, which were mainly registration areas, the number of deaths from typhoid fever in each month during the census year and the death rates per 100,000 of population, with distinction of cities and of rural districts:

MONTHS.	DEATHS.			RATE.		
	Total.	Cities.	Rural.	Total.	Cities.	Rural.
June	181	109	72	1.73	1.74	1.71
July	285	163	122	2.72	2.60	2.89
August	516	325	191	4.92	5.19	4.52
September	591	352	239	5.64	5.62	5.66
October	570	296	274	5.44	4.73	6.49
November	410	243	167	3.91	3.88	3.96
December	367	248	119	3.50	3.96	2.82
January	301	201	100	2.87	3.21	2.37
February	216	145	71	2.06	2.32	1.68
March	210	129	81	2.00	2.06	1.92
April	205	127	78	1.96	2.03	1.85
May	166	92	74	1.58	1.47	1.75

The death rates in each month, as given in the table above, and the relative magnitude of the rates in the cities and the rural districts, are shown in the following diagram:



It will be seen from the preceding table and diagram that the highest death rate from typhoid fever occurred in the cities in September and in the rural districts in October; and that it was higher in the rural districts than in the cities in the months of May, July, September, October, and November.